ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. 75 OAK PARK, ILL., JUNE, 1939 NO. 6

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

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Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 1618 Juneway Terrace, Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is $3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. $4.00 per year for all foreign countries included in the postal union. Canada, $3.50. Single current copies, 50 cents.

Editorials

TOO MANY PEOPLE LIVING OFF IDEAS INSTEAD OF REALLY DOING SOMETHING

Thomas H. Benton, Missouri's native artist and a descendant of the great "show me" statesman, says with refreshing frankness that he is fed up with the incessant talk of radical intellectuals. In New York he finds there are too many people living off ideas instead of really doing something. The intellectuals are unable to distinguish between realities and ideas that may be unreal and untried.

Nation's Business.

LOOKING BACKWARD FROM OUR NINETY-NINTH BIRTHDAY

As we go to press this issue of the Illinois State Medical Society is ninety-nine years of age The organization was founded in June, 1840. The founders and the original members of the Society have long since crossed the divide. They live with us in our daily practice either in tradition or memory.

Man is not immortal but in a limited sense a society or organization may be. To the individual the years bring wisdom but lessen the ability to profit by it. A medical organization is under no such handicap.

On this, its ninety-ninth birthday anniversary, The Illinois State Medical Society stands on a mountain of accumulative experience and yet greets its membership with a sprightly sense of being younger than ever.

Ninety-nine years! This is an age which most societies find venerable. In the West the next oldest contemporary is the Chicago Medical Society founded in 1850, and three years after the debut of the American Medical Association.

Think back and see if you can reconstruct the life of that time. The population of Chicago in 1840 was 4,470. The death rate for Chicago per 1,000 population was not obtainable; the death rate for Chicago eight years later, or 1849, was 73.8; in 1850 the death rate was 48.96 and

for 1938, 9.7; for the state of Illinois the death rate for 1840, was correspondingly high; and for 1938, has been similarly reduced.

Illustrative of rapid growth of the central west the population in Chicago in 1840, was 4,470, and of the State of Illinois 476,183. Ten years later or in 1850 the population of Chicago was 29,693; of the State of Illinois 851,470; now there are over 3,600,000 people in Chicago and over 7,941,000 in Illinois.

The Illinois State Medical Society was organized three years before the establishment of Rush Medical College (1843) the first educational institution in Illinois, also three years before Dr. Oliver Wendell Holmes had announced the infectiousness of puerperal fever; and nearly two years before Crawford W. Long discovered ether and two years (March, 1842) before Dr. Long performed the first operation under inhalation of ether, and only seven years before the first use was made of chloroform for the same purpose, and seven years before the organization of the American Medical Association.

Detailed record of the progress of medicine during the last ninety-nine years is epitomized below, we ask our members to read it carefully. In this editorial we refer to a considerable number of items that are of more than passing interest to Illinoisans:

1840 Illinois State Medical Society organized.
1847 The American Medical Association organized.
1850 Devaine discovered the organism of anthrax.
Chicago Medical Society organized.
1851 Ophthalmoscope invented by Helmholtz.
1854 Dr. N. S. Davis began regular publication of reports on health of Chicago.
Dr. Daniel Brainard advocated infiltration of solutions of iodine in treatment of poisoned wounds.
Robert Arthur, D.D.S., demonstrated adhesive properties of gold for dental fillings.
1855 Discovery of Trichinae.
First use of quarantine placards in Chicago.
E. S. Cheesbrough, engineer, advised flushing Chicago river with water from Lake Michigan for purification purposes.
1858 Czermak invented the Laryngoscope.
1859 Chicago Medical College started—the first medical school in America to require graded course of instruction.
Dr. John H. Rauch, in a paper before the Chicago Historical Society, called attention to the danger of intramural interments. As a result the city cemetery on the north side was dedicated as a public park by action of the city council. This was the beginning of Lincoln Park.
1860 Sir William Thompson's discovery of the electrometer.
1861 Semmelweiss, in Vienna, preached the doctrine of cleanliness as preventive of puerperal fever.
1863 Systematic nursing first gained a foothold in this country.
1865 Herman Sprengel devised the mercury air pump.
Mendel's publication of his laws of Hybridization. (Generally lost sight of until given publicity by): The simultaneous and independent announcement of the same laws by Tzermak in Austria, Codrens in Germany and De Vries in Holland, 1900.
1866 Local anasthesia by means of ether spray.
1867 Lister, acknowledged his debt to Pasteur, advocated antisepsis in surgery.
Dr. John H. Rauch appointed Sanitary Superintendent of Chicago. First tunnel, two miles long, completed for supply of lake water.
Intubation of stomach by Kussmaul.
Lister's employment of carbolic acid in antiseptic surgery, October 15th.
1868 First operation on adenoids by Meyer, Copenhagen, Denmark.
1869 First inspection of milk in Chicago.
Extirpation of diseased kidney first performed by Simon.
G. V. Black, D.D.S., demonstrated physical properties of gold as applied to dental fillings.
Discovery of hypnotic properties of chloral-hydrate by C. Liebreich.
1870 First milk ordinance in Chicago.
First successful vaginal ovariotomy by T. Gaillard Thomas.
1871 American Public Health Association formed, with John H. Rauch of Chicago as treasurer.
G. V. Black, D.D.S., brought out first dental engine.
1872 Discovery of latent gonorrhea in the female by Noeggerath.
The introduction of Crede's silvernitrate installation for infantile conjunctivitis.
1873 First successful removal of renal calculus by Ingalls (Boston), Nov. 8th.
Esmarch's method of bloodless surgery, Dec. 1st.
Golei's staining method of studying structure of the nervous system discovered, practically applied ten years later.
Gull describes myxedema.
Spirillum of relapsing fever discovered by Obermeier.
1874 Salicylic acid isolated by Kolbe.
Polcarpine first recommended as a remedial agent.
Improved staining methods and dried blood smears introduced by Ehrlich after Weigert's bacterial stain with carmin announced in 1871.
Bacillus of leprosy discovered by Hansen.
Repair of lacerated cervix by T. A. Emmett.

First application of galvanism to uterine myomata.

1875 Parasitic amebea in dysentery by Loesch.

1876 Establishment of Department of Health, Chicago.
Anthrax bacilli first grown in artificial media by Koch.
Discovery of the resistant anthrax spores by R. Koch.
First application to treatment of uterine myomata of Batty's operation of oblation of appendages by Trenholme.
Porro's Cesarean section, with excision of adnexa.

1877 Illinois State Board of Health established. License required for practice of medicine in the state. This was the third attempt to regulate the practice of medicine in the State. (Act of 1819, repealed in 1821, established a medical society with authority to license practitioners and to fine members absent from meetings. Act of 1825 was repealed before effective.)
At meeting of American Public Health Association in Chicago N. S. Davis read paper on Means of Reducing Infant Mortality. Dr. Henry M. Lyman protested against the placarding of scarlet fever, deploring the waste of cards and tacks, and revolting against the "yellow card nuisance."
Bacillus of malignant edema described by Pasteur.

1878 Eight per cent of hogs in Chicago slaughterhouses found to be infected with trichinae.
Birth registration in Chicago thought to be approximately complete.
First successful excision of pylorus by Billroth.
Plaster of Paris bandages first introduced by Mathyson, Belgian Army Surgeon.
Improved and popularized by Hubert von de Loo, who survived him 5 years.
Sayne's gypsum corset for spinal deformities.
Freund's extirpation of cancerous uterus.

1879 Pasteur announces the infective agent in puerperal fever.
Neisser discovers the Gonococcus.
Professor Lester Curtis, at Chicago Medical College, made the first systematic use of the microscope in medical education in America.
Sir William Crooke's announcement that matter is radiant.

1880 Discovery of Eberth's bacillus as cause of typhoid fever.
Discovery of the parathyroid glands by Sandstroem.
Streptococcus and staphylococcus isolated by Pasteur.
Iodine introduced into surgery by Moorhof.
W. D. Miller, D.D.S., established the bacteriological origin of dental caries.

1881 First nephropexy by Hahn.
Valuable modifications of the intraperitoneal method of treatment of the stump.
Amebea of malarial fever discovered by Laveran.
Epidemic nature of Poliomyelitis by Medin.

1882 May 5, Pasteur demonstrated the protective power against Anthrax, using cultures attenuated by growth in higher temperatures.
Pasteur demonstrated protective power of cultures attenuated by age against chicken cholera.
March 24, Koch announced the discovery of the Bacillus tuberculosis.
Saenger's improved Cesarean section.
Tubercle bacillus discovered by Koch.
Bacillus of Glanders discovered by Loffler.
Koch's discovery of the bacillus tuberculosis, May 20th.
Prophylactic treatment of rabies by injection of virus, Aug. 19th.
Koch's discovery of the comma bacillus of cholera.

1883 Germs of diphtheria and glanders discovered.
First series of lectures in Illinois given by Prof. Henry Gradle on the germ theory of disease.
Hemostatic effect of the fluid extract of hydrastis canadensis.
Lawson Tait's operation of extrauterine pregnancy.
Anti-diphtheritic serum introduced by Behring.
Diphtheria bacillus discovered by Kleba.
Introduction of Ichthyol into medical practice by Unna.

1884 Bauer, in St. Louis, operated for epilepsy, removing a portion of the skull.
Metchnikoff discovers the protective power of phagocytes.
Tetanus bacillus discovered by Nicolaier.
Gastroenterostomy introduced by Woelfer.
Antipyrin first prepared by Knorr.
Miller's employment of cocaine in eye surgery, October 11th. The first reports of the use of cocaine in this country were made by C. R. Agnew, W. O. Moore, and J. L. Minor (Medical Record, Oct. 18, 1884).
Cocaine introduced as an anesthetic in eye surgery.

1885 Dr. F. W. Riley published article in the *Daily News* calling attention to flies as carriers of disease.
First intubation in Illinois for laryngeal diphtheria performed by Dr. Frank E. Waxham.
Demonstration by Pasteur of curative action of injections of spinal cord of rabid rabbits attenuated by drying in treatment of hydrophobia. Use of cocaine as local anesthetic.
Intubation of Larynx by O'Dwyer, Feb. 21st.
Spinal anesthesia and local medication of the cord discovered by J. Leonard Corning, America.

1886 A series of improvements in the technique of the extraperitoneal method of treating the stump by which introligamentous tumors and those deep in the pelvis can be removed by D. J. Price and his pupils.
Acromegaly is connected with the hyophyis was discussed by Marie.
Steam sterilization in surgery introduced by V. Bergmann.

Colon bacillus discovered by Eccherich.
Antifebrin and acetannalid prepared by Cahn and Heppe.
Sulphonal prepared by Baumann.
Salol introduced by Neucki.
Strophanthus recommended as a substitute for digitalis by Fraser.

1887 Meningococcus discovered by Weichselbaum.
Bacillus of malta fever discovered by Bruch.
Howard Kelly's hysterorrhaphy.
Vaginal hysterectomy of cancerous uterus by Mary Amanda Dixon Jones.

1888 McEwen of Glasgow performed laminectomy for spinal paralysis.
Methods for making the stump intraabdominal but extraperitoneal, Polk. 1890, Kelly; 1890, Byford; 1892, Bear.
Discovery of bacterial powers of blood serum by Nuttall.
Total abdominal extirpation of myomatous uterus, by use of clamp (first resuscitation in America of the operation since those of Freund had been abandoned), Lewis.

1889 Gueniot suggested the section of skull for idiocy.
Operation performed by Lannelongue in Paris, Keen of Philadelphia, and Wyeth of New York.
Sanitary District of Chicago established.
Total abdominal extirpation, fastening stump of vagina to abdominal incision, for prolapse, Polk.
First separate ligation of uterine arteries in their continuity and total exterpation of this method, Stimson.
Introduction of cystoscope by Nitze.
Operations on spinal cord by Gowers and Hersley.

1890 Discovery of the antitoxin of diphtheria by Behring in Germany and Kitasato in Japan, with its curative and protective powers.
Antitoxin of tetanus discovered.
The non-fatigability of nerve-tissue demonstrated by Bowditch.
Koch's announcement of the preparation of tuberculin, Aug. 9th.
Discovery and experimental use of tetanus and diphtheria anti-toxin announced Dec. 6th.

1891 U. S. meat inspection law passed.
Lumbar punctures used in diagnosis of cerebro-spinal meningitis.
Surgical asepsis in surgery introduced by V. Bergman.
Michel's clamp and other devices for the closure of operation wounds.
First paper on lumbar puncture and study of cerebra-spinal fluid, by Quinckle.
Study of the ductless glands inaugurated by establishment of the fact of internal secretions, by Brown-Sequard.
Neuron theory of Ealdemeyer.

1892 Study of metabolism, led by V. Noorden.
Invention and use of Murphy button, Medical Record, 1892, vol. 42, page 665.

1893 Total abdominal extirpation of the uterus with supurating appendages, as a matter of election, Baldy, Krug, Polk.
Para colon and para typhoid bacilli described by Gilbert.
Transmission of Texas fever by cattle tick reported by Smith & Kilbourn.
Blastomycosis described by Gilchrist.
Heliotherapy dates back slightly over 50 years, but was first placed on a scientific basis by Finsen.

1894 Discovery of the photographic power of the X-ray.
Finlay's theory of the relation of the mosquitoes to the spread of yellow fever, Nov. 24th.
Infiltration anesthesia introduced by Schleich.
Bacillus of Bubonic plague discovered by Kitasato and Yersin.
Sauerbach's Pneumatic Cabinet an underpressure contrivance introduced.
Direct laryngoscopy introduced by Kirstein.
Eucleation of the stump as well as the myoma, by use of a serrated gouge, without severing the uterine arteries, Eastman.
Total extirpation of uterus in cases of extra-uterine pregnancy, where the tube which is not pregnant is diseased, Krug.

1895 Recognition of the doctrine of "internal secretions," first announced by Sajous in 1873 and ridiculed.
First diphtheria antitoxin issued by the Chicago health Department, Oct. 5.
William Conrad Roentgen, discovery of the X-ray.
Relation of mosquitoes to the spread of malaria, Sept. 21.
Discovery of bacteriolysis by Pfeiffer.

1896 Duehrssen's method of vaginal Cesarean section.
Discovery of bacterial agglutination by Gruber.
Widal-Sicard agglutination test for typhoid fever.
First case of heart suture by Farina.
Murphy's successful circular anastomosis of blood vessels.

1897 Recognition of action of precipitin and agglutinin in sero-analysis.
Haffkine's serum used successfully against the bubonic plague in India.
Rehn first successfully sewed a wound of the heart.
G. W. Crile's combination of different drugs on the basis of his experimental research into surgical shock (Cartwright Prize Essay).
American Medical Association incorporated in Illinois, Sept. 25.
Dysentery bacillus discovered by Shiga.
Discovery of bacterial hemolysis by Bordet.
Fischer synthetized caffeine, theobromine, xanthin, guanin and adenin.
Chicago Medical Society incorporated.

1898 Ronald Ross demonstrates Anopheline Mosquitoes as essential agents for the spread of malaria. (This discovery depended upon, and added confirmation of, the discovery of Manson in 1876 that filiriasis is spread by Culex mosquitoes and the discovery of Leveran in 1880 of the plasmodia of malaria. It also revolutionized public health work.)
Invasion of hookworm through skin demonstrated.
Heroin introduced by Dreser.
Direct bronchoscopy introduced by Killian.
Demonstration of hookworm infection by Loos.
Differentiation between human and bovine tubercle germs by Smith.
Action of digestive glands investigated by Pabloff.

1899 Finley's theory of transmission of yellow fever by mosquitoes, conclusively proved by U. S. Army Commission.
The clinical activation of the sea-urchin's egg by Jacques Loeb startled the scientific world.

1900 Discovery that the presence of Stegomia mosquitoes is essential for the spread of yellow fever.
Rats were found to be disseminators of bubonic plague with the aid of fleas.
Chicago Drainage Canal opened.
Alderman William Hale Thompson, by resolution in city council, secured the first public playground for Chicago.
Discovery of the specific action of guaiacol in malaria by Charles J. Whalen.
U. S. Army commission confirms theory of the relation of mosquitoes to the spread of yellow fever, Nov 3rd
Paraffin injection first employed by Gersunny.
Wertheim's radical operation for cancer of the uterus.

1901 The indications for early laparotomy in appendicitis and McBurney's point were first emphasized.
Erepsin discovered by Cohnheim.
Adrenalin, the active principle of the superranals, was isolated by Takamine.
Cosmetic employment of paraffin injections, April 13th.

1902 Demonstration of agency of the tsetse fly in spread of the African sleeping sickness—trypanosomiasis.
Carrel's method of vascular anastomosis and tissue transplantation.
Artificial respiration described by Matas.
Madam Curie's discovery of radium, May 3rd.
Discovery of the dysentery bacillus as a cause of summer diarrhea of infants in this country, Sept. 13th.

1903 Illinois Medical Society incorporated "to promote science and art of medicine."
Wright's recognition of "opsonins."
Atoxyl found specific for African trypanosomiasis, when given in efficient doses. Trypanosomes rendered immune by small doses.
Recognition that beriberi was result of use of rice which had been deprived of its outer coating, containing vitamins; first affirmed in 1880 by Eikman, and independently by Bradden in 1893.
Country dairy inspection inaugurated by Chicago.
Parasite of sleeping sickness discovered by Dutton and Ford.
Transmission of the diseases by the tsetse fly shown by Bruce.
Control of hook-worm disease in Porto Rico by Ashford.
A four year course was compulsory in 144 medical schools. Women are admitted to medical schools and State examinations in America, England, Germany, France, Switzerland, Spain, Sweden and Russia.
Veronal introduced by Fisher and v. Mehring.

1904 Important clinical and experimental contributions to the physiology of the thyroid and parathyroid were published by Pineles.

1905 Discovery by Schaudinn that Treponema pallidum is causative organism in syphilis.
Discovery of anaphylaxis, or recognition thereof.
Novocain discovered by Einhorm.
Spirocheata pallida discovered by Schaudinn.

1906 First systematic bacterial inspection of Chicago milk from dairy farms.
Wassermann reaction described, June 2nd.

1907 Clyde Snook, Edwin W. Kelly and G. Herbert White, three Americans, developed high tension transformer for X-Ray tubes.

1908 Adoption of dairy cards in Chicago Department.
Ordinance for pasteurization of milk not from tuberculin tested cows.
10,000 cows tuberculin tested.
City discontinues registration of births and deaths.
Lawrence avenue conduit completed (Chicago).
Koch's investigation of African fever.
Bacillus of pertussis discovered by Bordet and Gengou.

1909 Discovery of the louse as carrier of typhus fever.
State of Illinois assumes distribution of diphtheria antitoxin.
Under the Glackin law Chicago votes to establish a tuberculosis sanitarium.
Forster's operation for locomotor ataxia.
Announcement by Ehrlich's side-curtain theory and his introduction of salvarsan.

1910 First report of American cases in which salvarsan was given in syphilis, made by M. S. Kakels, Sept. 24th.
Fresh air treatment for tuberculosis.
Seratherapy endocrine medication.
Loos showed that the hook-worm larvae penetrate the skin.
Flexner's experimental production of poliomyelitis.

1911 Cushing described dyspituatarism.
Peyton Ross' successful transmission of sarcoma with filterable virus.

1912 Chlorination of Chicago water supply begun.
Publication of studies of Creel and Cannon on general physiologic action of adrenin.
Plasmodium of malaria, cultivated in the test tube, by Bass.
Intramedullary affections of spinal cord rendered accessible by Elsberg.
Abderhalden's announcement of the ferment-reaction in the diagnosis of pregnancy.

1913 Sex gland implantation Lespinasse.

1914 Testicle grafting for improvement of sex function, skin, circulation, arterio sclerosis, Lydston.

1915 Sir David Bruce's investigations of causes of sleeping sickness and Malta fever awarded by Leeuwenhoeck medal.

1917 State Board of Health of Illinois abolished. State Department of Registration and Education created and given jurisdiction over practice of medicine and allied sciences.
Illinois admitted to Federal Registration "Area for Deaths."

1922 Discovery of Insulin by Sir Frederick Banting of Toronto.

Since the founding of the Illinois State Medical Society the great plagues of the past no longer mow down our citizens; infant and maternity mortality have been greatly lowered; specific remedies, such as quinine, salvarsan, sulfapyridine, sulfanilamide, insulin, and the curative and prophylactic sera, have been discovered. The advances in surgery have been unparalleled, and the psychiatrists take our minds apart, polish up the wheels and return many victims of mental disease to useful citizenship.

Of the three great agencies that limited population when the society was young—famine, pestilence, and war—two are largely under control, and only war is functioning in the same old efficient manner.

Hospital care for the sick has been universally established with resulting saving of many lives. Few of the younger and middle-aged men in the profession today realize that many of their older colleagues who are their competitors, went through the horse-and-buggy, kitchen table stage of medicine and surgery.

Scientific discoveries and application have doubled the life expectancy in the past fifty years and the population of the world in the last ninety-nine years —a greater increase than in the preceding history of the world.

In 1840, at the time our society was established, the old gig and gray Dobbin, saddle bags, sulphur and molasses and the great horn spoon were the doctor's vade mecum. Contrast this condition with the present day method of transportation and treatment of the sick. The automobile and the aeroplane have relegated old Dobbin to the rear. Newer and more successful medication and surgery have supplanted the cruder methods.

Men and causative forces have achieved closer acquaintance in the ninety-nine years that have elapsed since the inception of the Illinois State Medical Society. Nine centuries of progress have been attained through those ten decades. With a similarly continuous pace, perhaps the light of the millenium may be unfolded to the world before the coming ninety-nine years have ended.

Civilization has been maintaining an excellent balance along lines economic, physiographic, artistic, philosophic, scientific and humanitarian. Without egotism the medical profession may account itself a vital factor in the motivation of these ten growing decades. Doctors of the world have played a conspicuous part in unfolding the wonders of scientific progress that have been revealed and have helped to keep them unlocked for daily use.

Owing to self-sacrificing labors of medical men during the last ninety-nine years, epidemic and endemic affections, such as malaria, typhoid fever, smallpox, yellow fever, typhus fever, cholera and hook worm diseases have been banished where civilization extends. Through the achievement of bacteriologists and clinicians diphtheria and syphilis are preventable and curable, and meningitis and many infections are soon to cease being the dread of the community. By preventing communicable disease and by reducing the high mortality that prevailed ninety-nine years ago, millions of people are alive today who otherwise would have gone to untimely graves.

Passing the subject of medicine, many events of vital interest to mankind have occurred since this Society was founded. We ask you to think back and to picture in your mind the domestic facilities in use in 1840. Here is one little item that will assist you: When the Society was founded the sewing machine had not been brought out. Visualize a nation of homes without sewing machines and you will have a dim idea of the changes our organization has seen.

The sewing machine is only one of the utilities that you will find lacking in the industries if you think back to 1840. Telephones, automobiles, aeroplanes, electric cars, will be left behind at the very start of the backward journey. Telegraphs had not yet been installed; the first line ran between Annapolis and Washington. Cables, electric subways, elevated railways, Pullman sleepers, national railway system, ready to wear clothing, the iniquitous delicatessen, modern plumbing from kitchen sinks to Oscar Hammerstein's bathtub drain pipe, the submarine, smokeless gun powder, electric light, wireless telegraphy, great telescopes that have made astronomy's readings a fireside companion in thousands of homes and educational institutions, typewriters, cotton gins, motorcycles, passenger elevators, moving pictures, gas ranges and a million details and conveniences of modern building and construction have been brought forth during the last ninety-nine years.

Farm labor is revolutionized by the invention of machinery to perform heavy work better than human hands or brute strength. The house of McCormick, headed by the late Cyrus McCormick, who invented the reaper and threshing machine, must be credited with this liberation.

When our Society was established anthracite coal was still an experiment as a fuel, and whale oil was to be reckoned with as an illuminant.

Since 1840 the United States has nearly doubled in age and quadrupled in point of area, trade, wealth and population. From a struggling adolescent it has become a mature woman and a big sister to the world at large.

In 1840 railroad mileage in the United States was about 5,000 miles for the twenty-six States then in the Union. Today it approximates 300,000 miles and traverses forty-eight States. When the Society was begun the estimated area of those twenty-six States was 940,000 square miles and the population less than 20,-600,000; in 1938 the United States area was 3,026,789 square miles and the population was more than 130,-000,000. In 1840 the national wealth of the country was $5,000,000,000; in 1938 it was over $300,000,-000,000. The annual production of wealth in 1840 was $1,000,000,000; in 1938 it was $100,000,000,000; foreign trade in 1850 was $250,000,000; by 1920 it was $9,-400,000,000 and by 1938 it had again doubled. In 1840 the center of population of the United States was 23 miles southwest of Parkersburg, W. Va.; in 1938 it was at Bloomington, Ind.; perhaps in 1940, it will be shown to be located about Chicago.

A host of happenings which we now look upon as distant history had not yet occurred when the Society first made its appearance. Zachary Taylor was President of the United States. He died July 9, 1850. Abraham Lincoln was practicing law and vowing that if he ever got the chance to hit slavery he would hit hard. But the Dred Scott decision, which was to prove the truth of Lincoln's maxim that the nation could not exist half slave and half free, was merely two decades in the future, and it is not likely that even in his wildest dreams the ex-rail splitter fancied himself in the White House.

When the Society began its career Louis Phillipe was on the throne of France; Germany was a welter of quarreling principalities, of which already Prussia seemed the strongest. Italy was a mere "geographical expression," divided among fourteen different states and provinces, and two of the fairest were under the ever-cursed dominion of the Hapsburgs. The revolution of 1848 had not yet dawned. The Irish famine lay below the horizon, the Turk ruled Roumania, and Japan was yet the Hermit Kingdom, on whose sacred shores no foreigner was allowed. English ships sailed to India by way of the Cape of Good Hope. Australia was known only as a convict's settlement.

Other red letter years during the existence of the Illinois State Medical Society include the French Revolution; gold had not been discovered in California; Australia had this good fortune in 1851; Louis Napoleon was made emperor of France in 1852; Crimean war began in 1853; Commodore Perry's opening of Japan, 1854; end of Crimean war, 1855; the great mutiny in India, 1857; the Dred Scott decision, 1857, and the rumbling of the civil war that was to come; first Atlantic cable message, August 4, 1857; secession of South Carolina, December 20, 1860; emancipation of Russian serfs, 1861, and in the United States civil war, 1861; Lincoln's emancipation proclamation and the ending of slavery, 1863; surrender of confederate army, April 9, 1865; assassination of President Lincoln, April 14, 1865; Atlantic cable laid, 1866; Dominion of Canada established, 1867; Franco-German war, 1870; France proclaimed a republic, 1873, three years after the capitulation at Sedan; Chicago burned, 1871; Mt. Vesuvius erupted, 1872; first elevated train run in New York in 1878; Bartholdi Statue of Liberty presented by France to the United States, July 4, 1884; Brazil became a republic, 1889; Cinema invented, 1894; Cuban revolution, 1895; Spanish American War, 1898; New York subway opened, 1904; North Pole discovered, April 6, 1910; Republic of Portugal established same year; United States postal savings bank system founded, 1911; South Pole discovered, December 14, 1911; China proclaimed a republic, 1911; the Peace Palace at the Hague dedicated, 1913; starting of the world's war, 1914; Panama canal opened, August 15, 1914; China restored as a monarchy, 1915; Russia rid herself of the czar, 1917; United States entered the world's war, 1917; termination of the world's war, November 11, 1918.

Perhaps the greatest industrial and social advances in the nearly five score years just ended have been recognition of the value of women and children to the State, and the practical granting of franchise to women over 21 years of age. Will the changes borne by the next ninety-nine years be as strange? Since history is merely a repetition of emotions and events, we have every reason to believe that progress will surprise itself during the next ten decades. Ninety-nine years from now we will stand, by comparison, where 1840 stands today.

A. M. A. UNANIMOUSLY DISAPPROVES PENDING WAGNER HEALTH BILL

Without a dissenting vote the House of Delegates of the American Medical Association at its St. Louis meeting in May disapproved of the Wagner Health Bill now pending in Congress "as inconsistent with the fundamental principles of medical care established by scientific medical experience and therefore contrary to the best interests of the American people. The report of the reference committee on the Wagner Health Bill is as follows:

Your reference Committee has carefully considered the Bill designated as S.-1620, "A Bill to provide for the general welfare by enabling the several states to make more adequate provision for public health, prevention and control of disease, maternal and child health services, construction and maintenance of needed hospitals and health centers, care of the sick, disability insurance, and training of personnel; to amend the Social Security Act; and for other purposes."

This bill was introduced by Senator Robert A. Wag-

ner of New York, February 28, 1939, and is commonly referred to as the Wagner Health Bill. The bill itself provides that, if it be enacted, it may be cited as the "NATIONAL HEALTH ACT OF 1939." The purposes of the bill are sufficiently stated in the title, but the bill itself must be recognized as a proposed amendment to the Social Security Act of 1935. The bill is intended to make effective a national health program recommended by the Interdepartmental Committee to coordinate health and welfare activities.

The House of Delegates of the American Medical Association at its special session in Chicago, September 16, 1938, considered the National Health Program and adopted resolutions based on five recommendations contained in the program. It is important that this fact be borne in mind, for the bill, which drafted long after these resolutions were adopted and at a time when the resolutions were presumably known to the proponents of this measure, does not recognize either the spirit or the text of these resolutions. Any criticism of this bill by the Association is not to be construed, therefore, as a repudiation of any of the principles adopted by the 1938 Special Session of the House of Delegates.

Analysis of the Bill

S. 1620 proposes to amend Title V. of the Social Security Act—Grants to States for Maternal and Child Welfare—and Title VI-Public Health Work and Investigations—and proposes to add to the Social Security Act certain new titles: namely, Title XII—Grants to States for Hospital and Health Centers; Title XIII—Grants to States for Medical Care, and Title XIV—Grants to States for Temporary Disability Compensation.

Already some individuals and organized groups in the United States have appeared before the Senate Subcommittee which has this bill under consideration and have urged its immediate enactment. Although the stated objectives of the Wagner Health Bill are generally recognized as desirable, your committee cannot approve the methods by which these objectives are to be attained.

Repeatedly, physicians and all other qualified professional groups have recommended the coordination and consolidation of the health activities of the Federal Government. The Wagner Health Bill leaves existing and proposed preventive and curative medical services widely scattered through several federal agencies.

This bill does not in any way safeguard the continued existence of the private practitioners who have always brought to the people the benefits of scientific research and treatment.

It does not provide for the use of the thousands of vacant beds now available in hundreds of church and community general hospitals.

The Wagner Health Bill proposes an extensive program in the field of "health, diagnostic, and treatment centers, institutions and related facilities," without defining their functions.

This bill proposes to make federal aid for medical care the rule rather than the exception, since it does not specifically limit its benefits to persons unable to pay for adequate medical care.

The Wagner Health Bill does not recognize the need for suitable food, sanitary housing and the improvement of other environmental conditions necessary to the continuous prevention of disease and promotion of health.

This bill insidiously promotes the development of a complete system of tax supported governmental medical care, thus undermining and debasing present standards of medical services.

The House of Delegates in September 1938 urged compensation for the loss of wages during sickness. The Wagner Health Bill deviates from this suggestion by proposing to provide medical services in addition to compensation.

The Wagner Health Bill would authorize an enormous expansion of governmental medical services and therewith ultimately unlimited appropriations for its health program. The funds necessary would be so great as to increase still further the present burdensome general taxation.

The Wagner Health Bill provides for supreme federal control. Rules and regulations must be promulgated by the Chief of the Children's Bureau in the Department of Labor, the Surgeon General of the Public Health Service, The Federal Emergency Administrator of Public Works, and the Social Security Board. These federal agents are given authority to disapprove plans proposed by the individual states.

The House of Delegates at its September 1938 Session approved the expansion of preventive and other medical services when the need could be shown. The Wagner Health Bill prescribes no method for determining the nature and extent of the needs for which it proposes allotments of funds.

The provisions in the Wagner Health Bill that have never been considered by the House of Delegates are: the authorization of appropriations for studies, investigations and demonstrations, and the creation of federal and state advisory councils.

The Wagner Health Bill, as judged by the considerations that have been here presented, is inconsistent with the fundamental principles of medical care established by years of scientific professional medical experience, and in the opinion of your committee it is, therefore, contrary to the best interests of the American people.

For years the health of the people of the United States, as measured by sickness and death rates, has been better than that of most foreign countries, and this improvement has been continuous. The fortunate health conditions in the United States cannot be disassociated from the standards and methods of medical practice that have prevailed under the present system of medical practice.

No other profession and no other organization has done more for the prevention of disease, the promotion of health and the care of the sick than have the medical profession and the American Medical Association. No other groups have shown more genuine sympathetic interest in human welfare.

The contribution of the individual members of the

American Medical Association to medical care is universally regarded as monumental in total volume. The contribution of the American Medical Association, through a program of medical education and the activities of its numerous councils which safeguard medical service, give abundant proof of interest in the problems of the national health. It has given continued consideration to these problems, whereas others show concern with these proposals because of a present but, it is to be hoped, a temporary need for relief. These are the groups which request revolutionary legislative action as indispensable for the extension and further diffusion of health facilities.

In view of its record and in consideration of the responsibility which American social history and the nature of medical care have imposed on the medical profession, the American Medical Association would fail in its public trust if it neglected to express itself unmistakably and emphatically regarding any threat to the nation's health and well-being.

The American Medical Association must therefore, speaking with professional competence, oppose the Wagner Health Bill.

Nevertheless, recognizing the soundness of the principles stated in the resolutions adopted by the House of Delegates at its special Session in 1938, namely, the expansion of preventive medicine and public health where need can be shown, the extension of medical care for the indigent and the medically indigent where the need can be demonstrated, with local determination of needs and local control of measures to supply these needs, your committee would urge the development of a mechanism for meeting these needs within the philosophy of the American form of government and without damage to the quality of medical services.

This question, as it relates to the aid to be given by an individual state to its own counties, municipalities or other local political units, is not immediately before this Association. The answer is to be found in the individual state constitutions and state statutes. Counties, townships and municipalities are creatures of the individual states and can be molded and guided by the state for its own purposes. The individual state, itself, is not a creature of the Federal Government. The Federal Government is, as a matter of fact, a creature of the individual states.

The fundamental question is how and when a state should be given financial aid by the Federal Government out of the resources of the states as a whole, pooled in the Federal Treasury. Disasters, such as floods, dust storms, fire and epidemics, have long been recognized as justifying such Federal aid. No state or person has ever been heard to object to the use of funds out of the Federal Treasury for such purposes. No one has ever proposed, however, that because Federal aid is extended under such conditions to a state in distress, a corresponding aid must be extended to every other state, regardless of its need. Nor has anyone ever been heard to say that Federal aid to a state in distress, because of flood, dust storm, fire or epidemic, shall not be extended, unless and until the suffering state has produced from its own treasury a stated amount of money to aid in affording the relief. The development of such bizarre thinking may be traced to those who have originated within comparatively recent years the granting of Federal subsidies—sometimes referred to as "grants in aid"—to induce states to carry on intrastate activities suggested frequently in the first instance by officers and employees of the Federal Government. The use of Federal subsidies to accomplish such federally determined activities has invariably involved Federal control. Any state in actual need of financial aid from the Federal Government for the prevention of disease, the promotion of health and the care of the sick should be able to obtain aid in a medical emergency without stimulating every other state to seek and to accept similar aid and thus to have imposed on it the burden of Federal control.

The mechanism by which this end is to be accomplished, whether through a Federal Agency to which any state in need of Federal financial assistance can apply, or through a new agency created for this purpose or through responsible officers of existing Federal Agencies, must be developed by the Executive and the Congress who are charged with these duties. Such method would afford to every state an agency to which it might apply for Federal assistance to enable it to care for its own people without involving every other state in the Union or the entire government in the transaction, and without disturbing permanently the American concept of democratic government.

SUMMARY

1. The Wagner Health Bill does not recognize either the spirit or the text of the resolutions adopted by the House of Delegates of the American Medical Association in September 1938.

2. The House of Delegates cannot approve the methods by which the objectives of the National Health Program are to be obtained.

3. The Wagner Health Bill does not safeguard in any way the continued existence of the private practitioners who have always brought to the people the benefits of scientific research and treatment.

4. The Wagner Health Bill does not provide for the use of the thousands of vacant beds now available in hundreds of church and community general hospitals.

5. This Bill proposes to make federal aid for medical care the rule rather than the exception.

6. The Wagner Health Bill does not recognize the need for suitable food, sanitary housing and the improvement of other environmental conditions necessary to the continuous prevention of disease.

7. The Wagner Health Bill insidiously promotes the development of a complete system of tax supported governmental medical care.

8. While the Wagner Health Bill provides compensation for loss of wages during illness, it also proposes to provide complete medical service in addition to such compensation.

9. The Wagner Health Bill provides for supreme federal control: federal agents are given authority to disapprove plans proposed by the individual states.

10. The Wagner Health Bill prescribes no method

for determining the nature and extent of the needs for preventive and other medical services for which it proposes allotments of funds.

11. The Wagner Health Bill is inconsistent with the fundamental principles of medical care established by scientific medical experience and is therefore contrary to the best interests of the American people.

12. The fortunate health conditions which prevail in the United States cannot be disassociated from the prevailing standards and methods of medical practice.

13. No other profession and no other group have done more for the improvement of public health, the prevention of disease and the care of the sick than have the medical profession and the American Medical Association.

14. The American Medical Association would fail in its public trust if it neglected to express itself unmistakably and emphatically regarding any threat to the national health and well being. It must, therefore, speaking with professional competence, oppose the Wagner Health Bill.

15. The House of Delegates would urge the development of a mechanism for meeting the needs for expansion of preventive medical services, extension of medical care for the indigent and the medically indigent, with local determination of needs and local control of administration, within the philosophy of the American form of government and without damage to the quality of medical service.

16. The fundamental question is how and when a state should be given financial aid by the Federal government out of the resources of the states as a whole, pooled in the Federal Treasury.

17. The bizarre thinking which evolved the system of Federal subsidies—sometimes called "grants-in-aid"—is used to induce states to carry on activities suggested frequently in the first instance by officers and employees of the Federal government.

18. The use of Federal subsidies to accomplish such Federally determined activities has invariably involved Federal control.

19. Any state in actual need for the prevention of disease, the promotion of health and the care of the sick should be able to obtain such aid in a medical emergency without stimulating every other state to seek and to accept similar aid, and thus to have imposed on it the burden of Federal control.

20. The mechanism by which this end is to be accomplished, whether through a Federal agency to which any state in need of Federal financial assistance can apply, or through a new agency created for this purpose or through responsible officers of existing Federal agencies, must be developed by the Executive and the Congress, who are charged with these duties.

21. Such a method would afford to every state an agency to which it might apply for Federal assistance without involving every other state in the Union or the entire government in the transaction.

22. Such a method would not disturb permanently the American concept of democratic government.

THE 1939 ANNUAL MEETING

The 1939 annual meeting of the Illinois State Medical Society was held in Rockford, May 2, 3, 4, and it was one of the best meetings the Society has ever held. The attendance was fine even though the meeting was held two weeks before the annual meeting of the American Medical Association, and this no doubt kept many physicians from the central and southern parts of the state away.

All meetings were conducted as scheduled, the programs were attractive, all well attended and there was an unusual interest shown in the various section meetings. The technical exhibit was the largest ever displayed at a down state meeting, and once more the members were interested in the developments during the past year on the part of the many concerns which supply the many needs of the medical profession.

The many scientific exhibits attracted unusual interest, and illustrated the fact that scientific exhibits are an important feature of the annual meeting. The Hall of Health, displayed in the large Rockford Armory attracted much attention on the part of the people of Rockford and surrounding territory. Large crowds were present each day while the health exhibits were on display.

An interesting feature in connection with the Hall of Health was the poster and essay contest for high school students. The committee on awards had a difficult job to determine which of the many entrants to the contest should receive the awards, but it was quite obvious that the judges selected for the purpose used good judgment in making their selections. At the opening meeting of the Society, the recipients of the six cash awards were present, and received cash prizes from the Chairman of the Council, Dr. E. P. Coleman.

It is interesting to note that on several occasions during the meeting, there were six sections meeting at the same time, and all well attended. The several joint meetings of two or more sections demonstrated the popularity of this arrangement.

The House of Delegates held the usual two meetings, and many important matters were referred to the reference committees for hearings and study, and were all acted upon at the second meeting. Complete transactions of the House of Delegates will appear in the July

ILLINOIS MEDICAL JOURNAL.

At the closing meeting of the House of Delegates on Thursday morning, the following were elected to office, committee appointments or to membership in the Council.

President-Elect, J. S. Templeton, Pinckneyville.

First Vice-President, J. S. Lundholm, Rockford.

Second Vice-President, F. H. Muller, Chicago.

Secretary, Harold M. Camp, Monmouth.

Treasurer, A. J. Markley, Belvidere.

Council for Third District, L. E. Day, Chicago.

Councilor for Sixth District, T. B. Knox, Quincy.

Councilor for Ninth District, Andy Hall, Mt. Vernon.

Councilor for Tenth District, Henry G. Horstman, Murphysboro.

Public Relations Committee, W. S. Bougher, Chicago; Fred H. Muller, Chicago; H. W. Woodruff, Joliet.

Medical Legislation Committee, John R. Neal, Springfield; Mather Pfeiffenberger, Alton; Robert H. Hayes, Chicago.

Medico-Legal Committee, Oscar Hawkinson, Chicago; T. B. Williamson, Mt. Vernon.

(Elected for three years)

Medical Education and Hospitals Committee, N. S. Davis, III, Chicago; W. R. Marshall, Clinton; H. O. Munson, Rushville.

Relations to Public Health Administration Committee, E. H. Blair, Chicago; Andrew Gansevoort, Chicago; Thomas Meany, Chicago; L. O. Frech, Decatur; C. G. Pool, Compton.

Delegates to American Medical Association, Chas. B. Reed, Chicago; L. O. Frech, Decatur; W. E. Kittler, Rochelle, C. E. Wilkinson, Danville.

Alternate Delegates to American Medical Association, Frank L. Brown, Chicago; E. H. Weld, Chicago; C. W. Carter, Clinton; E. P. Coleman, Canton; (for one year), Mather Pfeiffenberger, Alton.

Officers of Scientific Sections for 1940

Section on Medicine, E. M. Stevenson, Chairman, Bloomington; W. O. Thompson, Secretary, Chicago.

Section on Surgery, Frederick Christopher, Chairman, Evanston; Charles L. Patton, Secretary, Springfield.

Section on Eye, Ear, Nose and Throat, Frank W. Brodrick, Chairman, Sterling; Thomas D. Allen, Secretary, Chicago.

Section on Public Health and Hygiene, Loran E. Orr, Chairman, Springfield; H. A. Orvis, Secretary, Winnetka.

Section on Radiology, Warren E. Furey, Chairman, Chicago; Harry W. Ackemann, Secretary, Rockford.

Section on Pediatrics, H. Wm. Elghammer, Chairman, Chicago; Orville Barbour, Vice Chairman, Peoria; Bert I. Beverly, Secretary, Oak Park.

Section on Obstetrics and Gynecology, W. A. Malcolm, Chairman, Peoria; Herbert E. Schmitz, Secretary, Chicago.

Secretaries' Conference, A. R. Brandenberger, Chairman, Danville; A. R. Bogue, Vice Chairman, Rochelle; Carl E. Clark, Secretary, Sycamore.

Report of Committee on Awards

Silver Medal: H. E. Fisher, L. H. Ruttenberg, J. L. Bailen, and E. C. Fisher, "Night Hazards of Driving."

Bronze Medal: Rockford Police Department: "Accident Prevention, Accident Investigation, and First Aid Bureau."

Bronze Medal: Department of Health, Rockford Board of Education, "School Health in Rockford."

Certificates of Merit

Department of Public Health, Rockford: "The Story of the Pneumococcus."

The Chicago Heart Association: "Prevention of Heart Disease Is Better than Cure."

The Rockford Lions Club: "Sight Conservation and Blind Activities."

St. Anthony's Hospital, Rockford: "Pathological Specimens."

The Pittman Moore Company: "Medical Superstitions."

The Rockford Hospital Pathological and Nursing Exhibit.

Scientific Exhibit

Silver Medal: Departments of Pathology and Medicine of the University of Chicago and of Northwestern University and the Department of Public Health of the State of Illinois. "Pneumonia, Pathology, Pathogenesis, Modern Management, Control."

Bronze Medal: D. A. Bennett, Coleman Clinic —"Mesenteric Lymphadenitis."

Bronze Medal: T. E. Walsh, P. R. Cannon—"Some Effects of Commonly Used Nasal Medications on the Lungs."

Certificate of Merit

H. E. Mock and J. L. Lindquist: "Skull Fracture and Cerebral Injuries."

R. B. Malcolm, L. Rossiter, E. Palmer, W. H. Cole: "Surgical Pathology of the Colon and Rectum and its Relation to Operative Procedures.

R. E. Brackin: "Uretero-Intestinal Anastomosis or Anastomosis of the Ureter with the Colon."

P. J. Melnick: "Changes in Tumors Implanted with Radon Seeds."

C. M. Epstein: "Fractures of the Facial Bones."

Illinois Radiological Society: "Gastro-Intestinal X-Ray Studies."

POLITICAL MEDICINE AND PUBLIC HEALTH. BY HAVEN EMERSON, M.D.

An internationally recognized authority in Mid-Spring Issue, 1939 "AMERICA'S FUTURE" states the case against political medicine. Dr. Emerson is Professor of Public Health Administration at Columbia, former Health Commissioner of New York City and is a grandnephew of Ralph Waldo Emerson.

The assumptions upon which the proposed national health program is based are essentially fallacious.

In the first place it is assumed that the health of the people of the United States is neglected and is of low order. The record is consistently to the contrary effect—in fact, I believe it would be impossible to find in the history of any country such an experience as we have had since 1929. There is no exception to the steady annual improvement in the national health from 1929 to 1939. There has never been a period when so many people under one government have been so effectively protected against the major hazards of all the preventive diseases with which we have acquaintance. This is not merely in one particular disease, such as tuberculosis; it runs all thorugh the picture.

It cannot be an accident that we should have not only the lowest general death rate, but the lowest maternal mortality, the lowest infant mortality, the lowest tuberculosis, the lowest typhoid, the lowest diphtheria rate ever in the history of our country. There has been no exception to this continual improvement in health and it can be said that no 130,000,000 people under one government in the history of the world has such a record of freedom from preventive diseases as the United States now enjoys. And yet we are assuming that to go forward, it is necessary for us to undertake an entirely new project in public health.

There is a fallacy in the assumption that there is a mysterious need for reconsidering the methods by which the present progress has been attained. It is assumed that 40,000,000 people in the United States are unable to get—in fact do not get—the medical care they need. The evidence of physicians, medical institutions and the widespread human experience of all of us is to the effect that those who need medical care and want it are receiving it—except where poverty and sparsity of population groups has failed to attract physicians to settle among them.

Again, it is assumed that large expenditures of federal money will make great improvements in the health and care of the sick while skill, economic and social inequalities of serious degree remain uncorrected.

Experience suggests that expenditures for health and the care of the sick in the United States have been increasing at as rapid a rate as the several states, cities and counties can afford and as fast as trained personnel can be had to carry out the technological procedures. In fact, under the pressure of the Social Security money, commissioners of health of the various states of the Union have had to enlist for their forces persons they know are ill-prepared to carry this extended load. There has been more money available to hire people to go into public health than there are trained persons to carry out the intent of the Social Security Act at present.

Whatever money is granted from Washington to the States has been first taken out of the states and to that degree has deprived these states and their local health jurisdictions of resources which they know better how to spend for their benefit than do the officers of the federal government.

It is assumed there is a spontaneous, informed and wide-spread demand by the laity, particularly unemployed and unemployable and those

on relief and subsistence level wage earners, for a quality of medical care and health protection not now available to them. This assumption, I believe to be false. The record would point to ingenious, persistent organized propaganda and costly federal publicity and promotion to create a sense of dissatisfaction with the present medical services for the indigent and low income groups, who almost without exception have shown grateful appreciation for and confidence in the care provided through existing administrative institutions and agencies for the sick. No one can have contact with the sick as they come to us willingly, hopefully, confident and expectantly without knowing that they are grateful and satisfied that they are getting the best that can be offered. The best that can be had.

There are areas to which physicians and institutions have not gone and thus must be provided for by new or extended assistance to the location of physicians in these parts.

It is assumed that the health officers and organizations for the sick of the states and subordinate jurisdictions of civil government—authorities appointed, trained and qualified for expert care in public health—can, by virtue of federal grants and under federal regulation and restrictive standards, deal expertly with the elaborate services required for the sick in hospitals, dispensaries and in individual home, in spite of their lack of qualifications or familiarity with the diagnosis and treatment of disease.

You must distinguish the fact that the technique and responsibility of public health constitutes a specialty of medicine as different from all other specialties as obstetrics differs from psychiatry. Practitioners of public health cannot be expected to take on the entire responsibility for organized care of the sick in the United States and yet that is precisely the mechanism which has been created and provided for under the Wagner Bill. The only person in any state who shall have a chance to administer any of these several services that you have heard of in cooperation with the federal government, is the state health officer.

The state health officer has been picked not for his knowledge of the care of the sick, not for experience in clinical medicine, not because he has a reputation as a diagnostician in the treatment of disease, but because he has been trained to prevent disease, and that is as different as I say, from care of the sick as obstetrics is from psychiatry.

It is quite impractical to take the 48 different state health officers in the United States and create in them a super-council responsible for the care of the sick. Remember how these health officers are appointed. Remember that the state of Texas had 22 health officers in 23 years. Remember that one qualification of the newly appointed health officer of the state of Pennsylvania is because he married the daughter of a Philadelphia boss. Remember that the newly appointed health officer of the state of Massachusetts was appointed as a result of a political huddle just before the new governor came in and in the face of the opposition of the entire medical profession in the State.

About one-third of the health officers in the United States are not trained for the positions which they hold—to say nothing of them dominating the whole practice of medicine. This is a mechanism that just cannot work because there is neither the experience nor the responsibility in those men to carry it. It is recognized by the medical profession that these are not possible.

In New York we are blessed with a great health commissioner. We have a tradition of having good health commissioners, but if you ask that same man to take these great responsibilities of health and add to them the care of the sick, his efficiency will be lost by having his interest diverted to that end. Familiarity with this professional group of public health workers convinces me that the health services of the cities, counties, and states will deteriorate if the major responsibility of the health departments is in the care of general sickness.

It is assumed in this structure that the education of physicians, sanitarians, nurses and other associated professional personnel can be extended and hastened better by federal subsidies to individuals or institutions than by independent development of physicians in educational institutions under present auspices and with present resources. There is no experience, accomplishment or leadership in the field of professional education in the federal government of a quality equal to what is to be observed in the non-political and endowed institutions of education in the United States today.

Every draft of funds from the state is distributed according to some federal formula or

departmental criterion. The backward and impoverished states are encouraged to depend upon federal doles for purely local state functions. This device represents a duplication of the unsatisfactory system of medical services developed in an era of social conception and central government dominated by Bismarck and Lloyd George, neither of which has brought adequate support or lay satisfaction to Germany or Great Britain.

The United States is now at the head of the modern nations in the performance of medical functions for social ends. The structure created by the local and state governments and by society has functioned, is delicately adjusted—it is well understood by the communities concerned and is improved as fast as human resources and funds will permit.

The undertakings provided for in the Wagner Bill would set back rather than advance public health, and would destroy the strongest motives of self-reliance of local responsibility by dependence upon remote government officials unfamiliar with the respective needs, ambitions and capacities of widely varied state populations and government.

Nothing but a threatened calamity of catastrophic propositions could justify such control over functions which are reserved by the constitution to the police powers of the sovereign state. Calamity of an enduring kind to the applications of medical science for social ends is likely to follow any general acceptance of the policies and programs provided for in the Wagner Bill.

PREVALENCE OF IMPAIRED HEARING

A recent issue of *Health Messenger* comments on the frequency of impaired hearing, we quote in part:

Have you noticed a gradually increasing tendency toward deafness? If you are among the many people in the "over 40" age group whose answer to these questions is yes, the chances are rather good that your difficulty started when you were a child and that the outlook for cure is not now very promising.

What evidence is there of such a conclusion? In the first place, scientific research on a large scale has shed new light on the causes of deafness or partial deafness in adults. In the second place, some recent studies in Illinois show a surprisingly large proportion of school children with defective hearing. The human ear is tuned to a much wider range of sound than that expressed by the normal human voice so that impairment in hearing may begin and progress considerably before it can be detected by even a slight difficulty in hearing human conversation. For that reason, a process destined to impair hearing seriously in later life may begin during childhood and continue to grow worse gradually for years without recognition.

To determine, if possible, the causes of deafness a staff of scientists set up a laboratory at Johns Hopkins University fourteen years ago and since that time has accumulated about 15,000 records of patients who have been studied. From these studies Crowe and Baylor conclude, in a report published in the February 18, 1939 issue of the Journal of the American Medical Association, "that the most common type of middle ear deafness in adults begins during childhood. It often progresses so gradually and insidiously that it may not be evident, i. e., the frequency range of speech is not involved, until it is too late to correct the primary trouble and restore the hearing. We feel that if school children in the primary grades were examined with a nasopharyngoscope at least once a year and those with hyperplastic lymphoid tissue in and around the orifice of the Eustachian tubes were treated with radiation as often as necessary to insure normal functioning of tubes, the number of deaf adults in the next generation could be reduced by 50 per cent."

This conclusion and challenge is based upon convincing evidence and discussion too long and too technical to recite here. None need be reminded, however, that mechanical advancement, particularly in the fields of transportation and radio, adds constantly to the significant importance of good hearing for the sake of safety as well as cultural advancement. The appreciation of instrumental music, moreover, depends in no small measure upon the acuteness of hearing.

As to the prevalence of impaired hearing among children, a progress report of an investigation now underway in Illinois gives some rather astonishing indications. A modern audiometer is used to test the hearing of school children. This instrument is highly reliable and tests the hearing over a range of sound much broader than that of the ordinary human voice.

During September, October, November and December of 1938, hearing tests were given to 23,798 school children in sixteen different counties located in every section of the State. Impaired hearing was recorded in 3,816 or about 16 per cent. Both ears were impaired in 873 of these and one ear in 2,943.

Tests for vision was also given. During the four months, impaired vision was found in 2,914 of the 20,952 children tested.

Children whose impairment of either ears or eyes seems to require prompt attention are asked to see their family physicians without delay, taking the report of the test findings to the doctor. Nurses from the Illinois Society for the Prevention of Blindness, which is cooperating in the project, follow up the cases where no local facilities are available for that purpose.

Recently the U. S. Public Health Service conducted a sort of "inquiring reporter" survey of 9,000 adults selected at random in 12 different cities, each of the adults being asked if he or she counld hear perfectly well. Only about one-half of the 9,000 men and women interviewed believed that their hearing was normal and nearly one-half of these (44 per cent) failed to pass an audiometer test for perfectly normal hearing.

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
W. M. Hartman, M. D.
J. R. Neal, M. D.
I. H. Neece, M. D.

Edited by the Committee on Medical Economics
of the
Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois

R. K. Packard, M. D.
Ralph Peairs, M. D.
C. B. Ripley, M. D.
C. S. Skaggs, M. D.
C. E. Wilkinson, M. D.

Address all letters and communications to the Chairman.

The outstanding development of the past month with its numerous conventions of state medical societies, topped by the annual meeting of the American Medical Association at St. Louis, the week of May 15, was the report of the Reference Committee which has been studying the so-called Wagner Bill, designated as S. 1620, since it was introduced early this year. If other arrangements have not been made for the publication of this most comprehensive, complete and scholarly report at some other place in the current issue of the ILLINOIS MEDICAL JOURNAL, you will find the same at the completion of this article. Be sure and find it and read it carefully, particularly the twenty-two articles in the summary. If every medical man in the country will carefully digest the reasons and arguments against the passage of this bill, he will be ready to explain to his Senator or Representative why he should be opposed to the bill for other than reasons of economy. The committee, who compiled this report are entitled to the thanks and gratitude of the entire medical profession. This report was received and accepted as the opinion of organized medicine without a single dissenting vote. This is most unusual and shows the agreement of the medical profession on the subject, in spite of all the talk by a few dissenters.

At the meeting of the Illinois State Medical Society, held in Rockford on May 1-3, many economic problems were presented either in the House of Delegates or directly to the Council. As in the past they had to do principally with the care of the indigent and low income groups. Two of these were referred to this Committee for study and future report. One has to do with the care of those on old age or blind pensions, who receive additional money each month for medical needs. Often, however, these moneys are dissipated before they are used for that purpose so that, when illness develops, services must be rendered as in the past by the medical profession either entirely free or practically so. In Knox County, the problem has become most acute and there is in the process of formation a group plan modeled to some extent after the so-called Group Hospitalization Plan. This is to be examined carefully and the feasibility of its adoption as an experiment carefully considered. It is, of course, open to the criticism, that the medical profession is to furnish an indefinite amount of service at a fixed price. Another question up for consideration and like the other referred to this Committee was presented by Dr. A. H. Mason and Mr. Allen of Chicago. Under their plan a corporation, not for profit was to be formed to furnish medical, surgical, nursing and hospitalization care on an insurance basis. To do this a change in the State laws would be necessary so that a corporation could legally practice medicine in the State of Illinois. All they desired was the approval of the Illinois State Medical Society. After considerable consultation between the members of the Committee aided by the counsel of the Society, it was decided that such approval was not in accord with the ideas of the Society, and accordingly the request was refused. However, this did not stop the introduction of the bill into the legislative hopper, during the time of the annual meeting. Of course, its fate is indefinite; but we can rest assured that our most efficient Legislative Committee will watch it carefully.

Another resolution passed by the House of Delegates and referred to this committee came from the St. Clair County Medical Society and requested a study of voluntary sickness insurance plans being developed by the constituent and component societies of the American Medical Association, with the view of submitting to the Council at a subsequent meeting, a plan for sickness insurance in Illinois. In view of the many plans now in operation throughout the nation, including those in Illinois, this becomes a stupendous task, which will require much time

and energy, as well as the expenditure of some money's. The cooperation of the American Medical Association will be of the utmost necessity. It is to be hoped that officers of local county societies will answer promptly all inquiries as to the nature and success of plans in their communities.

The Bureau of Medical Economics of the American Medical Association has just published a brochure on Factual Data on Medical Economics, which should be of the greatest interest and value to anyone who is making an effort to keep up-to-date on medical facts which are of assistance in the preparation of talks to either the profession or lay audiences. If you want a copy write to the Bureau at their Chicago office.

The Mid-Spring issue of *America's Future* continues to combat State Medicine with most excellent articles by Haven Emerson, Ray Tucker and H. L. Mencken. We hope that many members of the Illinois State Medical Society subscribe to this magazine and in addition to reading it thoroughly, pass it on to their friends or at least keep it on the table in their waiting room. For the benefit of those who may have missed reading the article by H. L. Mencken, we will reprint the same with the permission of the Editor and the author, provided the Editor has the necessary space available at this time.

This completes another year of this column under the supervision of this Committee. We thank you for the kind words of approval we have received, and trust that you will accord the new committee, particularly the Chairman, the same cooperation.

E. S. Hamilton, Chairman,
Committee on Medical Economics.

BEEN PUSHED AROUND

The Sage of Baltimore Unlimbers in Their Defense

H. L. Mencken

When the Hon. Thurman W. Arnold, Assistant Attorney General of the United States, announced from the New Deal Kremlin that he was about to proceed against the American Medical Association as a wicked and unlawful monopoly, the project appeared to be only an elephantine sort of practical joke.

Almost alone among the goons of the New Deal, the Hon. Mr. Arnold is a man of humor, with a waggish gift of hitching moral theology to the music of Offenbach. He has well displayed that gift in his excellent books.

Moreover he is a jurisconsult who has studied law as well as taught it, and so he may be trusted to know that there is sometimes danger in proving too much. That danger, it seems to me, shows itself in his dithyrambs against the association for refusing to countenance the Group Health Association, Inc., of Washington:

"It is an attempt on the part of one group of physicians to prevent qualified doctors from carrying on their calling, and to prevent members of the Group Health Association from selecting physicians of their own choice. The Department (of Justice) interprets the law *as prohibiting combinations which prevent others from competing for services as well as goods.*"

The italics are mine, but the words are the Hon. Mr. Arnold's. If they mean anything at all, they mean that it is a violation of the Sherman Act to throw a picket line around a struck plant and prevent non-union men from entering—nay, that it is equally a violation of the law to sign or even advocate a closed-shop contract.

If the law, as the Hon. Mr. Arnold argues, protects non-union doctors against union control or interference, then how can it fail to protect non-union plumbers? Its specific object, as he explains in another strophe, "is to prevent *artificial impediments by organized groups who desire to escape competition.*" Well, what is a labor union but such an organized group, and what is its purpose if not to escape competition?

The Hon. Gentleman was fetched down from Yale to enforce the Sherman Act, and is thus not charged with honing the teeth of the Wagner Labor Relations Act, but no doubt he has heard of it, and perhaps even read it. If so, he must be aware that one of its principal objects is to prevent the formation of company unions. Can the Group Health Association, Inc., be described rationally as anything else? Who organized it—the doctors or their bosses? Do the doctors elect new members of the medical staff, or do the bosses appoint them? And if a doctor is canned by the bosses, does he continue as a member or lose his membership?

These considerations left me in some doubt

James H. Hutton, M. D.

President, Illinois State Medical Society, 1939-1940

that the Hon. Mr. Arnold was really serious. But if he goes up to the Supreme Court with his theory, and convinces four judges and Hugo Black, there will be merry hell to pay all along the line, and he'll be lucky if he is not sent back to Yale C. O. D.

The present disingenuous assault upon the American Medical Association did not originate in the Department of Justice. It originated in quite other quarters and has been going on for a long while. There are doctors who aspire to office in the association, with all the honors and dignities thereto appertaining, but do not seem to be able to get the necessary votes; they appear to believe that their chances would be better under some sort of medical new deal. And there are quacks who have felt the association's heavy hand: they are against it on all counts and to the death.

Both these parties have been on the warpath for years. Of late they have been joined by a miscellaneous rabble of pinks, some of them outright converts to the Moscow hooey and others members of the "I'm Not a Communist—But" Association. The aim of these brethren is to nationalize the profession of medicine in the United States as it has been nationalized in Russia. Some of them say so frankly, and undertake to prove idiotically that the Russian system is better than the American. The rest, less honest, root for it without openly advocating it.

All the pink weeklies and other manic-depressive sheets are hot against the A. M. A. and belabor it constantly. They denounce it under the name of the medical trust, and allege that its members are racketeers who rob their patients and oppress the poor.

The Group Health Association, I have no doubt, is careful in selecting its medical staff; that fact is not disputed by opponents of its scheme.

The caveats filed against it have quite different grounds. The chief of them is that the plan interposes a third party between doctor and patient, and subjects the doctor to lay control.

The "arrangements" to which the American Medical Association objects, and quite properly objects, not only offer hospital accommodations, but also medical service. They employ doctors, organize them into staffs, put them under superiors (some medical, but others lay), and hire them out to subscribers. Whatever the subscribers pay for their services goes, not to the doctors, but to the organization. It pays them whatever they are willing to work for, and keeps the rest.

Obviously, no doctor who works under such conditions can be said to maintain a strictly professional status. He may have a good job; he may like it, and he may give competent and conscientious service to the patients assigned to him, but in the last analysis they are the association' patients, not his. It may take them away from him at will, and assign him others. It may take them all away from him by dismissing him. They exist as his patients only by the association's grace, and on conditions that it lays down.

He is no longer a free agent. He works for an association whose bosses have his livelihood, or the greater part of it, in their hands. They are tempted, in order to keep within their income from members, to work him as hard as possible, and he is tempted, as a makeweight, to abate his professional ardors, to the damage of his patients.

A conscientious and industrious man may resist that temptation, but there it is, and experience with State Medicine has shown that in the long run it has effects. In so far as the members save money by the scheme, the doctor loses, and the only way he can recoup is by cutting down the service he offers.

Certainly the lawyers in the Department of Justice must be well aware that an analogous effort to invade and deprofessionalize their own profession has been under way for years and that nearly all the decent lawyers in America have opposed it violently and gone into court time and again to prevent it. All the objections that these decent lawyers have brought against the practice of law by corporations are valid against the practice of medicine by corporations. Both schemes, however artfully they may be disguised, involve the organization of professional men into gangs bossed by laymen and the retailing of their services to all comers. Both are destructive of their professional status.

But the chief objection to the plan, from the standpoint of the American Medical Association, is that it clearly paves the way for State Medicine. Once it gets going, uplifters will arise to argue that the fees of the members ought to

be paid by the taxpayer, and the first time the proposal comes to a vote it will be carried.

Then all the doctors on the roll will become jobholders, and their professional labors will be largely controlled and determined by politicians. Some doctors believe that, with the New Deal reaching out constantly for more and more power, this is inevitable, and a few even profess to like the prospect. But the overwhelming majority are against it, and the American Medical Association continues to oppose it, Arnold or no Arnold.

Correspondence

HOW THE SCIENTIFIC SERVICE COMMITTEE FUNCTIONS FOR THE AID OF COUNTY SOCIETIES

Back in 1923 the Educational Committee was developed to give health educational services to the laity as a whole. Within a relatively short time a surprisingly large list of contacts was developed, many lay groups all over the state desiring to utilize the services made available for them.

At that time Dr. James Hutton thought more aid should be given to county medical societies and especially those smaller societies which were having trouble in securing speakers for their meetings. The Scientific Service Committee was formed, as a sub-committee of the Educational Committee, to give all possible aid to county medical societies. A long list of speakers and subjects were developed and sent to all of them. At first efforts were concentrated on procuring speakers for county societies, aiding them in publicizing their meetings, and later on, many of the announcements for the meetings were mailed out from the Educational Committee office, while the Secretary's office of the Society would furnish a suitable mailing list of physicians in surrounding counties.

The work of this committee was increased through the development of a plan to send a group of speakers, or clinicians to deliver symposiums on important subjects, to hold clinical conferences or clinical-pathological conferences, as the Society would prefer.

In many county organizations, speakers in teams were sent at regular intervals, perhaps weekly or semi-monthly, to give a regular course of instruction on subjects selected by county societies. Clinics on heart conditions, pediatrics, obstetrics, orthopedics, and other subjects were arranged, whereby the clinician would examine and discuss the various cases during the day, then at night he would address the society at a special or regular meeting. Letters were always sent to county medical societies telling them of the services which were available and asking for suggestions as to how the committees could be of better service to them.

For at least thirteen years the Committee has used many men from the St. Louis Medical Schools and their hospitals, and it has been the practice of the Committee to write to the Deans when a St. Louis man was desired, and they have invariably assisted in getting the man desired, or a good substitute.

A fine spirit of cooperation has been enjoyed with the State Department of Public Health. Dr. Harold H. Hill who is Field Agent for the State Department in the Maternal and Infant Welfare Program, has had complete cooperation on the part of Miss McArthur and the committees from the start of the program. The State Medical Society Committee on Maternal Welfare is composed of physicians from each Councilor District, and meets quarterly to talk over plans and receive reports. Doctors Falls and Hill are advisory members of this Committee.

The same type of cooperation exists with the State Department of Public Health in their pneumonia control program. Doctor Lindberg who has charge of that program came before the Council and asked for suggestions and expressed a desire for Society cooperation. This was promptly given and he has received much aid in the campaign from the Committees with Doctor Berghoff and Miss McArthur scheduling many speakers on pneumonia and its modern treatment throughout the state during the past winter.

The Scientific Service Committee has been developed to assist county societies, who are in complete charge of their own plans and programs. The State Medical Society through its House of Delegates and the Council have long thought that it was not necessary to apply for outside aid in carrying on any of these functions.

Dr. Robert S. Berghoff, Chairman of the Scientific Service Committee of the Illinois State Medical Society was the official representative

of Illinois at a meeting held in St. Louis on May 17th of the Associated State Committees on Post-Graduate Medical Education. He presented the following written report to those attending. After listening to the reports of the representatives, it was the chairman's firm conviction that no state medical society, operating WITH or WITHOUT Federal financial aid is offering to its county medical societies a more comprehensive, divergent and practical service than that of the State of Illinois.

DATA ON SCIENTIFIC SERVICE COMMITTEE

A Report to Committee on Post Graduate Instruction

St. Louis, May 17

Post graduate instruction in the State of Illinois is under direct supervision of the Scientific Service Committee—sub-committee of the Educational Committee of the Illinois State Medical Society.

The Educational Committee of the Illinois State Medical Society was founded in the year 1924.

Its primary functions are:

1. Lay Medical Education
2. Radio Health Talks
3. Newspaper Health Columns
4. Etc., etc.

Its annual average financial budget is $12,000 contributed entirely by funds from the State Medical Society. No funds from State or Federal Agencies.

The Scientific Service Committee was established as a separate and definite sub-committee in the year 1927 under the Chairmanship of Dr. James H. Hutton who held that office until 1933. Dr. Frank L. Brown served for two years. Dr. Robert S. Berghoff was appointed Chairman in 1935 and has continued to serve in that capacity. The Scientific Service Committee is financed entirely by the Illinois State Medical Society through the Educational Committee on an average annual budget of approximately $4,000.00.

Function: The sole function of the Scientific Service Committee is the servicing of the scientific needs of the 91 component county medical societies.

Personnel: The Scientific Service Committee consists of a chairman—appointed or reappointed annually by the Chairman of the Council, the President of the Illinois State Medical Society, the Secretary, and two additional members—all serving without honorariums.

The Committee functions through a central office, or clearing house, located in Chicago, under the direct supervision of a full-time secretary with many years experience. This secretary has a full-time assistant and one stenographer.

Scientific Facilities: The Scientific Service Committee has during the past twelve years built up a vast and comprehensive Speakers' Bureau. This bureau at present comprises over five hundred individuals, men and women, prepared to put on lectures, demonstrations, clinics and conferences, on medicine, surgery, the specialties, and on the widest possible variance of subjects. These speakers are selected, in part, from the Universities and Medical Schools of Chicago, as well as from the widely scattered county societies throughout the State. It has long been realized that individual practitioners in far distant counties, frequently through local contact are better able to convey a message to a neighboring county society than can a lecturer from the metropolis.

The list of speakers, as well as the subjects, is revised and augmented yearly—and is sent out in pamphlet form annually to each county secretary and president.

The following types of scientific programs are available to all ninety county medical societies:

1. Lectures and Demonstrations on every specialty and sub-specialty of medicine and surgery.

2. Clinics—on heart disease, orthopedics and general surgery, internal medicine and its sub-specialties.

The modus operandi of clinics in general, is as follows: A speaker or speakers, selected by the county secretary from his list, is sent to the county medical society by the central office in Chicago on a given date. In the presence of the local county society members, the specialist examines and demonstrates patients previously selected for him. After the clinic, he conducts a general resume of his subject, and the meeting ends with a general discussion.

3. Clinical Conferences—on a wide variety of subjects were instituted during the past year. A guest speaker selected by the local county secretary, opens up a given subject, and calls upon several local physicians previously appointed to expand upon the topic—which again is followed by a general discussion. These informal con-

ferences are proving even more popular than the stereotyped formal lecture or paper.

In addition to providing scientific programs to county societies, entirely gratis (the expenses being borne by the Scientific Service Committee) —the Committee renders further service as follows:

1. The central office will on request mail out notices concerning these meetings, to all members of county societies.

2. Through the medium of over 600 local newspapers, publicity is afforded these meetings, both in advance and after the meeting.

The response to this service proves its merit and appreciation. Year by year the numbers of county societies making use of this service have grown so that during the past year a peak of 82% was reached. Not only did 82% of the ninety county societies call upon their scientific service committee for aid, but called some of them six and eight times in the current year and one society for weekly programs from September 1st to May 1st.

The Scientific Service Committee takes justifiable pride out of the fact that beginning twelve years ago—in a pioneer work—blazing a trail with only a very few other states to keep it company—it has plodded along, growing and expanding, until today it boasts of a roster of illustrious men and women in every specialty and sub-specialty of medicine and surgery able and ready to service the ninety widely scattered county medical societies—and during the current year it has actually carried its many messages to 82% of all of its counties at their own request—And mind you, without a dollar of State or Federal money!

Robert S. Berghoff, M. D.,
Chairman Scientific Service Committee.

EDUCATIONAL COMMITTEE

Reports Progress during April and May

HALL OF HEALTH:

The Hall of Health held in connection with the Annual Meeting in Rockford proved to be most outstanding with fifty different groups exhibiting. Through the office of the Educational Committee the exhibitors were secured, the handbook prepared, and material compiled for publicity purposes.

Comments from Rockford indicated that the Hall of Health was a great success.

"The exhibition should have continued for an entire week."

"I had no idea of the great contribution that the medical profession has made to society's welfare."

"More shows like this, put on by the medical profession rather than State or local health departments, elevates the dissemination of medical knowledge to a higher plane."

"This exhibition, more than any other propaganda I have seen, brings to light the necessity of restricting the control of the practice of medicine to the medical profession instead of governmental agencies, even if it should be placed under the jurisdiction of a federal, state or local health department."

"If the general public knew more of the problems of the doctors as shown at this exhibition, state medicine would be forgotten."

"A fine exhibition and our organization would enjoy participating when the Illinois State Medical Society meets in Rockford again."

"We have had many people staying with us remark that they have never before, in all their experience, seen such a marvelous exhibit."

The poster and essay contests proved very successful with about 250 high school students writing essays on the family doctor. The Office of the Educational Committee wrote letters to all contestants in both contests thanking them for entering and congratulating those who won prices. Special package libraries were compiled and loaned to students competing in the essay contest.

SPEAKERS' BUREAU:

95—Programs were arranged for lay audiences throughout the State.

The Committee cooperated with the Chicago Board of Education in promoting Youth Week and scheduled doctors to address 21 high school assemblies in Chicago.

Speakers were scheduled for the Annual Meeting of the Illinois Congress of Parents and Teachers and exhibit material was furnished on the services offered by the Illinois State Medical Society.

RADIO:

26—Radio programs were given from Chicago stations and copies of material were furnished downstate county societies.

EXHIBITS:

Exhibits were furnished Marshall Field & Co., The Annual Meeting of the Illinois State Dental Society, the Illinois Congress of Parents and Teachers, The Hall of Health, The Association of Physical Education Directors.

PACKAGE LIBRARIES:

Special package libraries were compiled for students entering the essay contest held in connection with the Hall of Health.

Package librariees on all types of health subjects were furnished physicians in many sections of the state who had been asked to address lay groups.

AID TO COUNTY MEDICAL SOCIETIES:

600—Notices prepared for LaSalle County.
125—Notices prepared for Perry County.
138—Notices prepared for Effingham County.

200—Notices prepared for Hancock County.
200—Notices prepared for Bureau County.
293—Notices prepared for Henry County.
273—Notices prepared for Lee County
104—Notices prepared for Lawrence County.

SPECIAL PUBLICITY FOR MEDICAL MEETINGS:

611—Releases about Annual Meeting in Rockford.
200—Invitations sent to Secretaries about Secretaries' Conference.
98—Releases re Bureau County.
36—Releases re Hancock County.
13—Releases re Maternal Welfare Program in Peoria.
29—Releases re Effingham County.
8—Releases re North Shore Branch.
43—Releases re Henry County.
58—Releases re LaSalle County.

PRESS SERVICE FOR APRIL AND MAY:

40—Releases to papers using health education articles monthly.
128—Releases to Chicago newspapers.
636—Releases to Illinois newspapers.
976—Releases to newspapers using regular editorial health features.

Health articles written and approved on the following subjects:

Only a Sore Throat?
Walk This Spring
The Doctors Meet
How Is Our Health
We Celebrate Mothers Day
Early Spring Hay Fever
Maintaining Good Sight
Tetanus and Summer Time
In the Good Old Summer Time
A Happy Vacation

MAILING LIST:

714—Articles to Libraries.
684—Articles to Hospitals.
233—Reprints from A. M. A. on "What is Osteopathy" to libraries and hospitals.
4,128—Health articles to lay list which includes W. P. A. Teachers, Home Advisers, Schools, Red Cross leaders, Teachers.
3,000—Copies of "State Medicine" by Dr. H. P. Saunders, "Sickness and Hospital Insurance" by Dr. N. S. Davis and "What Socialization of Medicine Means to You" by Dr. Harold M. Camp were sent to the entire mailing list including laymen, hospitals, libraries.

SCIENTIFIC SERVICE COMMITTEE:

The Chairman of the Scientific Service Committee attended a special luncheon meeting of the chairmen of postgraduate education from other state societies in connection with the St. Louis A. M. A. meeting. He gave a report on the activities in postgraduate education of the Illinois State Medical Society which was enthusiastically received.

39—Scientific programs were arranged by this Committee during the months of April and May. Calls were received from the following:

Scott County, Iowa; Lawrence County, Sangamon, Perry, Will-Grundy, Madison, Mercer, McLean, Bureau, Effingham, Kankakee, Pike, LaSalle, St. Clair, Hancock, Alexander, Union, Champaign, Rock Island, Coles-Cumberland, Marion, Henry, Stephenson, Douglas.

The Scientific Service Committee cooperated with the Maternal Welfare Committee in promoting special obstetrical and pediatric programs in hospitals in various sections of the state. These meetings were in the form of clinical conferences with cases being reviewed in the afternoon and general discussions in the evening.

The Committee is prepared to give any type of scientific help requested by county medical societies. During the past year it has arranged monthly or weekly programs for a number of societies following a very definite plan of study.

POSTGRADUATE COURSES IN OBSTETRICS AND PEDIATRICS TO BE REPEATED AT THE UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

The Departments of Obstetrics and Pediatrics of the University of Illinois cooperating with the staffs of the medical schools of Chicago and the State Department of Public Health, will again offer to physicians of Illinois an intensive one week's course in obstetrics and pediatrics at the Research and Educational Hospitals. The course begins each Monday morning at nine o'clock and ends at noon on Saturday. The courses begin July 10 and end with the week of August 28.

As seen by the schedule, the course will be of practical value to the family physician. It will include bedside clinics, antepartum and postpartum care, manikin, demonstrations, didactic lectures, care of the newborn and premature infant, child-health problems, immunization procedures, and round table discussions on many important obstetric and pediatric problems.

The staff members of all Chicago Medical Colleges are participating in giving the course and will include such Obstetricians and Pediatricians as Doctors W. C. Danforth, F. H. Falls, F. L. Adair, Joseph Baer, A. F. Lash, W. H. Browne, Charles Newberger, Julius Hess, Clifford Grulee, Arthur Parmalee, Isaac Abt, Maurice Blatt and H. E. Irish. Opportunity is given for individual consultation work with many of these men.

The registration is limited to 20 each week. Physicians outside Chicago are given preference. Physicians are urged to make their reservations early as experience has shown in the last two years that the courses have been given, that the places will be filled rapidly. A limit is placed on the class number in order to preserve the conference type of instruction that has been so enthusiastically received by the physicians attending in the past two years.

The registration fee of $10.00 is the only fee required. Application should be accompanied by the registration fee and should be sent to Mr. G. R. Moon, 1853 West Polk Street, Chicago, Illinois.

APPLICATION BLANK

Name.....M. D. Age..... Date of Graduation.....
Street Address .....City.....
Member of.....County Medical Society (not required)
Registration Fee $10.00.
1st choice—week of .....
2nd choice—week of .....
3rd choice—week of .....

Excellent living accommodations can be obtained at the nearby students' Y. M. C. A. at reasonable rates.

Make checks payable to the University of Illinois, College of Medicine.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9 A. M.	Lecture Obstetrics	Lecture Pediatrics	Lecture Obstetrics	Lecture Pediatrics	Lecture Obstetrics	Lecture Pediatrics
10-12 A. M.			Obstetrical Dispensary Pediatric Dispensary			
			ROUND TABLE DISCUSSIONS			
1-2 P. M.	Obstetrical Subject	Pediatric Subject	Obstetrical Subject	Pediatric Subject	Pediatric Subject	
2-4 P. M.			Ward Walks—Research Hospital Obstetric—Pediatric			
4-5 P. M.	Manikin	Obstetrical Consultation Hour	Pediatric Consultation Hour	Manikin	Preparation of Diets for Infants	
5-6 P. M.	Manikin			Manikin		
6 P. M. to 4 A. M.			Deliveries Home and Hospital			

EXAMINATIONS—AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The American Board of Obstetrics and Gynecology announces that at the recent examinations held by the Board at St. Louis, Missouri, on May 13, 14, 15, and 16 two hundred and fifty-nine candidates were examined. Two hundred and twenty-eight candidates were successful in the examinations and were certified by the Board, twenty-nine candidates failed, and two examinations were not completed by the candidates.

At the annual meeting of the Board, held in St. Louis on May 12, 1939, it was found necessary, on account of increased administration expenses, to increase the application and examinations fees. Effective immediately, these are to be as follows: Application fee $15.00, payable upon submission of application for review by Board. Examination fee $75.00, payable upon notification to candidate of acceptance of the application and assignment for examination. Neither fee is returnable. This increase does not apply to candidates whose applications were filed prior to May 12, 1939.

The next written examination and review of case histories (Part I) for Group B candidates will be held in various cities of the United States and Canada on Saturday, December 2, 1939, at 2:00 P. M. *The Board wishes to announce that it will hold only one Group B, Part I, examination in this and subsequent years.* Candidates who successfully complete the Part I examinations proceed automatically to the Part II examinations held later in the year.

Applications for admission to Group B, Part I, examinations must be on file in the Secretary's office not later than October 4, 1939.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting in Atlantic City, N. J., on June 7, 8, and 9, 1940, immediately prior to the annual meeting of the American Medical Association to be held in New York City from June 10 to 14, inclusive.

Applications for admission to Group A, Part II examinations must be on file in the Secretary's office not later than March 15, 1940.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

GRADUATE COURSES IN ELECTROCARDIOGRAPHY

Two Weeks—August 21-September 2, 1939

By Dr. Louis N. Katz

Director of Cardiovascular Research

This is an intensive course offered to the general practitioner. There will be practice on several electrocardiographic machines and discussion of the principles of their construction and use. There will be sessions on interpretations of electrocardiograms illustrated by lantern slides and practice by the student with unknown records. Routine records taken during the time of the course will be discussed. Emphasis will be placed on chest leads and on the importance of the electrocardiogram in coronary sclerosis and thrombosis. The mechanism and interpretation of heart irregularities will be developed.

As group and individual instruction will be given, the course is open to both the beginning and advanced student in Electrocardiography. It is planned to individualize the course so that at the end of the period each student will be capable of taking and properly interpreting routine electrocardiograms. In order to accomplish this purpose the class will be limited in number. It is imperative, therefore, that reservations be made early.

The fee for the course is $100.00. Reservations may be made upon receipt of $10.00 which will be applied on the tuition. An hourly program of the course will be sent on request.

For further information address: Michael Reese Hospital, Cardiovascular Department, 29th and Ellis Ave., Chicago, Illinois.

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

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First period starts June 19, 1939.

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Cataract, glaucoma, trachoma, optic nerve atrophy and other eye diseases coupled with more general diseases such as high blood pressure, hardening of the arteries and diabetes are responsible for nearly three-fourths of all blindness. The rest is attributed to accidents (about 21 per cent.) and congenital or early infancy causes (approximately 7 per cent.).

Among the accidents causing blindness—which account for about one-fifth of the entire amount—the largest single cause is falls (16 per cent.); next in order come automobile accidents and burns (each 10 per cent.); and poisonings and firearms (each 7 per cent.); the remaining 50 per cent. is distributed over a large number of known and unknown types of accident. Forty-three per cent. of these accidents are classified a occupational injuries, those occurring at work; 27 per cent. occurred in the home and 30 per cent. in public places, including automobile accidents.

The report pointed out that blind persons are concentrated in the low income groups. Seventy per cent. were found to be in families with annual incomes of less than $1,000.

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The registration fee of $10.00 is the only fee required. Application should be accompanied by the registration fee and should be sent to Mr. G. R. Moon, 1853 West Polk Street, Chicago, Illinois.

APPLICATION BLANK

Name.....M. D. Age..... Date of Graduation.....
Street Address .....City.....
Member of.....County Medical Society (not required)
Registration Fee $10.00.
1st choice—week of .....
2nd choice—week of .....
3rd choice—week of .....

Excellent living accommodations can be obtained at the nearby students' Y. M. C. A. at reasonable rates.

Make checks payable to the University of Illinois, College of Medicine.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9 A. M.	Lecture Obstetrics	Lecture Pediatrics	Lecture Obstetrics	Lecture Pediatrics	Lecture Obstetrics	Lecture Pediatrics
10-12 A. M.			Obstetrical Dispensary *Pediatric Dispensary*			
			ROUND TABLE DISCUSSIONS			
1-2 P. M.	Obstetrical Subject	Pediatric Subject	Obstetrical Subject	Pediatric Subject	Pediatric Subject	
2-4 P. M.			Ward Walks—Research Hospital Obstetric—Pediatric			
4-5 P. M.	Manikin	Obstetrical Consultation Hour	Pediatric Consultation Hour	Manikin	Preparation of Diets for Infants	
5-6 P. M.	Manikin			Manikin		
6 P. M. to 4 A. M.			*Deliveries Home and Hospital*			

EXAMINATIONS—AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The American Board of Obstetrics and Gynecology announces that at the recent examinations held by the Board at St. Louis, Missouri, on May 13, 14, 15, and 16 two hundred and fifty-nine candidates were examined. Two hundred and twenty-eight candidates were successful in the examinations and were certified by the Board, twenty-nine candidates failed, and two examinations were not completed by the candidates.

At the annual meeting of the Board, held in St. Louis on May 12, 1939, it was found necessary, on account of increased administration expenses, to increase the application and examinations fees. Effective immediately, these are to be as follows: Application fee $15.00, payable upon submission of application for review by Board. Examination fee $75.00, payable upon notification to candidate of acceptance of the application and assignment for examination. Neither fee is returnable. This increase does not apply to candidates whose applications were filed prior to May 12, 1939.

The next written examination and review of case histories (Part I) for Group B candidates will be held in various cities of the United States and Canada on Saturday, December 2, 1939, at 2:00 P. M. *The Board wishes to announce that it will hold only one Group B, Part I, examination in this and subsequent years.* Candidates who successfully complete the Part I examinations proceed automatically to the Part II examinations held later in the year.

Applications for admission to Group B, Part I, examinations must be on file in the Secretary's office not later than October 4, 1939.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting in Atlantic City, N. J., on June 7, 8, and 9, 1940, immediately prior to the annual meeting of the American Medical Association to be held in New York City from June 10 to 14, inclusive.

Applications for admission to Group A, Part II examinations must be on file in the Secretary's office not later than March 15, 1940.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

GRADUATE COURSES IN ELECTROCARDIOGRAPHY

Two Weeks—August 21-September 2, 1939

By Dr. Louis N. Katz

Director of Cardiovascular Research

This is an intensive course offered to the general practitioner. There will be practice on several electrocardiographic machines and discussion of the principles of their construction and use. There will be sessions on interpretations of electrocardiograms illustrated by lantern slides and practice by the student with unknown records. Routine records taken during the time of the course will be discussed. Emphasis will be placed on chest leads and on the importance of the electrocardiogram in coronary sclerosis and thrombosis. The mechanism and interpretation of heart irregularities will be developed.

As group and individual instruction will be given, the course is open to both the beginning and advanced student in Electrocardiography. It is planned to individualize the course so that at the end of the period each student will be capable of taking and properly interpreting routine electrocardiograms. In order to accomplish this purpose the class will be limited in number. It is imperative, therefore, that reservations be made early.

The fee for the course is $100.00. Reservations may be made upon receipt of $10.00 which will be applied on the tuition. An hourly program of the course will be sent on request.

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In the most commonly advocated plans of voluntary and compulsory sickness insurance, premiums are collected in cash and then transformed within the insurance

administration into service benefits for the insured. All other systems of insurance collect premiums and pay benefits in the medium of exchange. The two sides of the balance sheet are then written in the same units. It is much more difficult to tamper with the bookkeeping for political purposes or to deceive the sick as to the benefits received than in systems in which receipts are counted in cash and benefits are delivered in an unmeasurable service. Indemnity insurance collects the premiums in cash and pays cash to the insured on a definite scale in accordance with the economic losses suffered from sickness.

There would be fewer complications and far less red tape in such an indemnity system than in one with service benefits. Free choice of physician would be automatic. Restrictions on prescribing and other phases of treatment would be unnecessary, as there would be no need to deceive the patient as to the quality and extent of the service he was receiving.—Journal A. M. A.

THE REASON FOR HOMICIDES

The statistical bulletin of the Metropolitan Life Insurance Company, January, 1939, offers the following data as to the various reasons for our national homicide rate.

Half the homicides committed in the United States arise over some trifling incident. This is the conclusion reached by a study of 500 homicides reported to the Metropolitan Life Insurance Company among a group of its policyholders. It may well be assumed that the same proportion applies to the total of about 10,000 homicides reported annually for the United States as a whole.

The information regarding the circumstances attending the 500 homicides covered by the present study has been obtained from such sources as reports of coroners' inquests, statements of insurance investigators, and newspaper clippings.

A great variety of situations—for the most part, absurdly trivial quarrels—led up to these misfortunes. Chief among these were disputes concerning domestic or family affairs: An irate husband beats and kills his wife because his dinner is not ready on time; a drunken youth shoots his mother for remonstrating with him about his drinking to excess; a man shoots a friend after an argument over being the last to be served a glass of beer in a neighbor's home. No less than 11.6 per cent of all the slayings follow domestic quarrels about no more serious affairs than these.

The second important occasion of quarrels leading to homicide involves money or property, usually of little value—sometimes no more than 25 cents. In still other instances, quarrels arise because of insulting remarks or personal affronts, gambling differences, or other situations that create a burst of hatred or anger. Typical incidents of this kind are the following: A lunchroom proprietor shoots a customer after an argument over the quality of a sandwich; a man is beaten and killed following a quarrel developing from a person's accidentally stepping on another's foot; a man slashes another because they quarrel about who shall play a mechanical nickelodian first. In a considerable number of these cases the abuse of alcohol is mentioned. Out of the 250 killings resulting from quarrels, in 116 cases either the slayer, the victim, or both had been drinking.

In connection with the homicides arising from jealousy or thrwarted love, it is interesting to note that the beloved, and not the love rival, is more often the victim. Fifty-three persons were slain thus, as against 35 slain by their rivals in a love affair. In this type of homicide the slayer commonly commits suicide. In fact, one-fourth of the slayers who were classed as aggressors in the slaying of husband, wife, or lover ended their own lives also.

Homicides arising out of or during crimes of violence—robberies, burglaries, or jail breaks—account for 80 victims in this experience, or 16 per cent of the total number. Unfortunately, the officers of the law and law-abiding citizens are the victims more often than the criminals. Of 43 persons who died at the hands of felons, 6 were police officers; 15 were going about their work as watchmen, gasoline station operators, tradesmen, etc.; and the remaining 22 were other law-abiding citizens. The number of felons slain was 37, of whom 33 were killed by law officers and four by their intended victims.

Spectacular murders by gangsters constitute a lower percentage of the total than we should be lead to expect from the publicity given to them. Only 14 of the 500 slayings, or under 3 per cent, fell into this class. These murders occur in connection with rackets involving the dope traffic, labor disputes, and lotteries, and usually arise from rivalry between gangs or the attempt of one gang to break into the territory of another.

Ten persons were killed in attempting to evade arrest for trespassing or for disturbing the peace. Eight were killed for revenge on account of personal grudges of long standing or from a desire to even scores against informers. Insane persons committed 14 slayings, of which six took place in institutions. In 11 cases no motive for the slaying was apparent; the slayer was crazed with liquor and had no particular enmity against nor quarrel with his victim. Apparently, at the moment, he merely wanted to kill. Of the three cases that are classified as due to miscellaneous causes, two involved sex offenses, and in one case the slayer killed his wife in despair over financial troubles.

Criminal abortions, of which there were 22 fatal cases, are included here to conform with the current international practice of statistical offices, which list this cause of death with homicides.

This review of 500 recent homicides brings out strikingly that practically all killings arise under the stress of emotions of fear, hatred, anger, jealousy, or greed. And, absurd as it may seem, by far the majority are due to disputes or quarrels about trifles. Surely under such conditions it should be possible to reduce the number of homicides to the point reached in other civilized countries.

FOR SALE—Reasonable, large size electric blanket—used but a few times.

I. W. CLAYTON
1643 Farwell Avenue

Original Articles

SHALL ORGANIZED AND SCIENTIFIC MEDICINE CONTINUE ITS PROGRESS?

SAMUEL E. MUNSON, M. D.

SPRINGFIELD, ILL.

Another year has passed into memory since the House of Delegates turned over to me the mantle of authority as President of the Illinois State Medical Society. Some of those well known throughout the State for their zeal in the progress of organized medicine, and revered by those in the communities where they lived and practiced their profession, have been taken by death from among us.

It certainly would have been a privilege if a year ago we could have had the opportunity of drawing aside the curtain of destiny and foreseeing the road before us, which we all looked forward to with misgivings. As a profession we have steadily carried our ideals forward to a better understanding with the public and a higher regard by those who serve us in public office.

The National Health Conference held in Washington, July 18, was one of the first matters of importance to appear on the horizon, to which certain members of the medical profession were invited. You have heard much of the Interdepartmental Committee appointed by the President to co-ordinate the health and welfare activities of the government. The survey upon which some of this committee's conclusions were based was made by W. P. A. workers in about seventeen states.

This survey was used by the committee by which they assembled data which was much at variance with data and information gathered by the American Medical Association through the medical profession. As we medical men know, there is not one-third of the population in our communities that are poorly clothed, poorly fed and without medical care. As has been stated, "This would be more of a social and economic problem than medical."

A committee of seven, including some of the officers of the American Medical Association, was appointed at a meeting of the House of Delegates last September, to represent the medical profession at future meetings of the Interdepartmental Committee. Most of you are familiar with the results of the subsequent conference through the reports published in the *Journal of the American Medical Association.*

The Wagner Bill, now pending in the Senate, for the purpose of amending the Social Security Act and widening and extending government service as outlined last summer, is thought will not pass Congress this session.

It seems this law makes no specific mention of compulsory sickness insurance, but introduces the idea of the allotment of federal money to the individual states for medical care by the Social Security Board, without specifying the manner or means to be used in individual states.

The bill also makes no provision for utilization of existing hospitals, when it is stated that existing hospitals show a constant vacancy in bed capacity of thirty per cent.

Another matter in which we are much concerned is the indictment of the American Medical Association by a Federal Grand Jury in December. As stated by Dr. Irvin Abell, the fundamental principle involved is, if a conviction should occur, the power to police its members will no longer rest within a professional organization, and not only will the medical profession be affected, but all other organizations, such as those maintained by dentists, lawyers, architects and engineers.

In this scheme to bring about a broad application of social justice in some localities, there are some who desire complete socialization, and in this effort medicine has been chosen as the field for exploitation.

On account of the great size of our country and the various economic plans applied in the administration of the various existing conditions, the adjustment and correlation of these must require time and the best effort of the medical profession with a constantly enlightened public.

We are aware that mortality has been reduced fifty per cent in the last fifty years, and life expectancy has been increased one hundred per cent.

We also realize that there is a wide space existing between known medical knowledge and its practical everyday application. Do I dare say this may be still widening because of the rapid accumulation of medical knowledge that comes to us day by day from the research lab-

Presidential address, 99th annual meeting of Illinois State Medical Society, Rockford, May 3, 1939.

oratories and covering all the different branches of medicine?

From no other source is there greater effort and interest manifested than the medical profession in an effort to close this space so that the practitioner in general medicine may achieve the reasonable ability to use this new known knowledge in his everyday practice. Of course, we desire that this be accomplished in a way to continue the ethical institution of medicine.

I have no doubt some of you think this is an opportunity for the president to bring to the attention of the members of the Illinois State Medical Society some of the abuses that exist in the interrelations of our profession. Few know of these, as they have and do exist, better than I, with four and a half decades in the practice of medicine.

I believe in our societies there is ample organization of committees and duly elected officers to change and modify tendencies that detract from the honorable position and esteem as a profession that we have held since the early days of pioneer American medicine.

Is there any profession or organization, even religious, with a membership above criticism in the conduct of their affairs in daily life? So each member of the medical profession is a member of society, subject to all its influences of social environment and the exigencies of human existence.

I believe the time is here now for us to treat our affairs ethically among ourselves as a family.

Recently I sat upon the platform with all the official body of a great medical group with a large and cultured audience, and two hundred young men, the pick of the medical profession of America, were sworn and received into its membership. The retiring president, a man of fine qualifications and ability, discussed in his address as his own opinion, the abuses of splitting fees and a plan of compulsory health insurance which he said appeared to be desirable.

Group clinics and other phases of present-day medicine were also discussed, with their abuses, with a frankness which I believe should be left to the privacy of the medical family.

However, he mentioned that diagnostic services are often rendered in clinics and organized groups for low fees, frequently below cost, in competition with practitioners and internists outside the groups, when they (the groups) made a profitable income from their surgical fees.

At a special session of the House of Delegates of the American Medical Association, held in Chicago, which was called for the consideration of the National Health Program, as submitted by the conference in Washington last summer, a reference committee was appointed, and after due consideration, made a report from which we now have final conclusions and answers for some of the things which had much perturbed the medical profession for the past two years.

A matter which had been talked about and considered for many years, and was advocated as early as 1876, was that there be a Federal Department of Health, with a secretary who should be a physician and a member of the President's Cabinet—a recommendation which is certainly most desirable.

Medicine has feared the possibility of a single ministry, to be concerned with the care of the indigent, non-employment and social service, which would be superior to the Minister of Health presided over by a physician.

At this special session of the House of Delegates, the reference committee passed the following resolutions:—

1. They approved the principles of hospital insurance, or group hospitalization, and believed the plans should confine themselves to the hospital facilities and in no way to include medical care. They encouraged county or district medical societies, with the State Society concurring, to develop appropriate means to meet the local requirements.

2. They believed it practical to develop cash indemnity insurance plans to cover the costs of emergency or prolonged illness.

3. They definitely opposed any system of compulsory health insurance, as it would undoubtedly establish a far-reaching tax system and thereby cause a great increase in the cost of government, with possible political control.

4. They recognized the soundness of the principles of workingmen's compensation laws and recommended the expansion of such legislation to provide for meeting the costs of illness sustained as a result of employment in industry.

5. They recommended the full use of existing facilities of hospitals, rather than building new ones where adequate hospitals exist, that the

thirty per cent. of unoccupied beds in existing hospitals could be utilized.

It would seem that instead of having compulsory health insurance, or sickness tax, with the money collected and dispensed by the government with its many attendant disadvantages, especially high-cost administration, where agencies are set up to provide such insurance, this should comply with state statutes. This could be accomplished by the present existing plan in most of the places where federal and state funds have been distributed.

As stated by Dr. Parran: "I firmly believe that every health organization should have local control and that every health program should be built on the specific needs of the community it is designed to serve. But unless we do have a health organization in every community, unless the leading doctors in each state are interested enough to set its standards and the State Health Department is competent to supervise it, unless the State has federal leadership and financial assistance as merited, we shall never have an adequate national health effort against the great diseases of our day."

It would seem in order to meet the constant and insidious arguments for compulsory health insurance, that we must more definitely have the people understand its workings and application. As is stated by one of the most recent and reliable observers in England and Europe, although millions are raised, there is no more for each individual case of illness—actually there may be increasingly less from year to year.

There is definite profound interest in the future of medicine by men from all ranks in the profession from coast to coast. What is commonly present among organized medicine is a latent to acute sense of need and an incipient idea in many minds how to go forward. Each person or group is apt to have a bias, and what is common, a personal sense of pride or feeling of superiority in his own plan. That is frequently the most serious stumbling block to progress.

As it is so frequently said, in the practice of medicine nothing should come between the Doctor and his patient—one of the particular objections to socialized medicine. In a measure we know this is largely true, that the individual physician cares for the individual patient.

This as a rule does not apply to public health and sanitation, as well as the knowledge of advanced methods of treatment that is not equally acquired and understood by all physicians, but makes it all the more imperative that each physician has the opportunity of any advanced knowledge and postgraduate education that can be applied for the benefit of his patient.

There are only two sources by which this can be made available and practical, that is, the Federal Government and organized medicine. This in a way cannot be accomplished by the medical schools or with the special groups of medicine. They are neither equipped by the personnel or organization by which this can be accomplished. It would seem, then, that this can only be accomplished by our best efforts through our various medical organizations and other agencies that may be of assistance and at the present time can be kept under our control—certainly not the government.

As we all know, individual initiative is one of the characteristics of our American people. As someone has stated, for this reason it would require at least three generations to make any success in the field of social medicine. Therefore, the shortest way in which this can be accomplished is through organized medicine itself, directed to the individual physician.

The plan that has already been used and put into effect in several states is an inspiration in its success for those who are using other plans that are not so effective.

My conclusions from the attitude of the profession downstate where I mentioned plans for more intensive training for the men individually and at their homes, was met with most enthusiastically, and I feel sure that with an establishment of this plan, postgraduate study will become popular.

I now better understand the difficulties in making any definite progress during the past year in postgraduate training for the downstate men. However, I do not feel less enthusiastic about the need and even the desire of the downstate men to enjoy this privilege.

It has been fully agreed that the science and art of medicine cannot be brought to its fullest accomplishment in the undergraduate program of study. Undergraduate training and knowledge necessarily develops with practice and experience. But if the man in general practice is to maintain a reasonable knowledge of the advancement of medicine and its application to

everyday practice, he must continue to have the opportunity for educational and clinical instruction.

I do not refer to graduate work as a preparation for the specialties, but helpful courses brought to the general man who is unable to leave his home and practice for the time required for postgraduate work. This will enable him to have a keener interest in the scientific talks and papers presented before his society, as well as a desire for short courses and clinics in postgraduate medical schools when financially able.

Much of the propaganda against organized medicine today is on account of this inability of some of our profession to continue to have the advantage of clinical training, and to close this gap between the new advancement in scientific medicine today and its application to everyday practice.

With the trite saying, "Better medical service means better physicians," I believe the House of Delegates should have a temporary postgraduate committee appointed, to study the situation for one year and report back to this House of Delegates a plan.

On account of the mounting roll of the indigent part of our population, with the claims of those who proposed to speak for the Federal government as to their adequate care, the trustees of the American Medical Association suggested a plan for the more than 2,000 county medical societies of the United States, to determine the real conditions as to whether there is adequate medical care or not.

A committee was appointed from the Illinois State Medical Society and a survey started about a year ago. It was thought at the time that if this was done conscientiously it would provide more accurate statistics than had ever been obtained by any lay or governmental organization. The results of this survey in many of the states has been published each week in the J. A. M. A. I understand in our state it has been completed in Cook County. As to the results downstate, you will have a report to the House of Delegates from the committee appointed last year, as to its success or failure as a whole.

It is a pleasure to bring to your attention this year the great interest and awakening of the large group of members of the Illinois State Medical Society, that heretofore have not had adequate recognition in the affairs of our Society and only limited opportunity of participating in its annual program.

I refer particularly to the Physicians Association of the Department of Public Welfare. Headed by a very capable and enthusiastic leader, they applied to the Council and were granted a special group organization in the State Medical Society, and have their first meeting this year.

I do not think it can be denied that organization has been the chief cornerstone and foundation of the modern advancement of scientific medicine. Should we be satisfied with this progress, which is admitted on all sides by other professions, as well as the public? I believe we can only be satisfied with greater effort in organization and scientific advancement so that we can be better prepared to deal with the intramural complications and abuses of our family affairs.

If, as has been said, medicine has made more progress in scientific discoveries in the last half century, is it not reasonable to believe that with the greater advancement in organization of all the various branches of medicine, that we shall succeed far beyond our past accomplishments, even with the disadvantage of the burden of economic medicine upon our shoulders?

We can scarcely proceed with a discussion unless we pause to express our enthusiasm and profound admiration for American medicine as we know it today. We should hold in high reverence the names of those men, who by toil and self-denial have brought to our profession the esteem and respect of the American public for our scientific attainments in the diagnosis and treatment of modern diseases.

Even early practitioners of medicine realized the great disadvantage of living unto themselves in the practice of their profession without having meetings or being organized and presenting papers for discussion, and conferring with each other in regard to their experiences with the prevailing diseases of the times. In other words, clinical knowledge and the management and treatment of diseases was only gained in this way.

I think we all realize that a small number of medical men, in their respective communities, have largely carried the responsibility of the ethics of the profession with the advancement

of scientific medicine, and have kept alive its organization.

Our problem is that the profession, in greater numbers, should feel the importance of their responsibility and give of their time and effort to improve the conditions under which they practice their profession in their respective communities.

Membership in the county medical society is the first thing necessary to make a physician conscious of his need of better methods of the practice of medicine, and his ethical responsibility to his profession and the community in which he resides. With the profession well organized, there will be a higher regard for the ethical relations that exist between its members.

What are our capacities and powers, both as individuals and as members of the medical profession, and how can we fulfill our responsibility professionally and economically to society and to the community and state in which we live? These are thoughts and problems to be considered at this, the 99th annual convention of the Illinois State Medical Society and its House of Delegates.

We need a new enlistment to increase the numbers of our medical profession, who have been trail-blazers and who have only been satisfied to build upon old plans of organization for advancement until they could see and apply the new ones.

This I would emphasize, that the more thoroughly we are organized and the more intensive our efforts to give help and assistance to all of our members, the less interference we may expect from the public, which in the last analysis means the government.

You know it is not by those who rank high in medicine, or even those who are considered average, that as a profession we are judged by the public, but by those who have had limited opportunity in preparation and inability to keep pace with the progress and advancement of medicine, and yet have the responsibilities of life and death placed in their hands.

He who is most inadequately prepared for his responsibility is without ability to understand his own limited qualifications, even in the medical profession.

This easily applies to the cults, who clamor each session of Congress or the State Legislature to bestow upon them the full rights and privileges of the responsibilities for the treatment of the sick, without the opportunity of adequate training or the preliminary qualifications, and which would also permit even their former graduates who had no training in the special branches of medicine which they now desire to have granted them, with full privilege to practice medicine in all its branches.

Will a brief review of the past give us assurance of the continued progress of medicine in the future? One of the most dependable facts upon which to build a reasonable conclusion of future medicine is the progress we made with more intensive organization during the past years, and which has been gaining with greater momentum each year. This has brought into the field constantly new ideas and better planning, with its rapid dissemination of knowledge among our profession.

It is heartening under the present circumstances that the membership of the American Medical Association has increased from less than 108,000 to about 114,000 during the past year—this in spite of the problems we have faced. These conditions seemingly have made the medical profession more conscious of the need of membership in organized medicine.

On account of the number of states and the various plans that have existed in each one for the administration of public health problems, including the care and treatment of the indigent, there must be an adjustment and adoption of those that are found to be most applicable to local difficulties.

In localities where government assistance is imperative and necessary, the planning and application of this assistance must be supervised and directed by the medical profession: the recommendations made by the reference committee of the American Medical Association, that county and district societies, with the State Societies, should be encouraged to meet the needs of their local requirements.

Although medicine has made its great advancement in spite of many handicaps, I believe present conditions indicate a more rapid advancement, as we have witnessed in the last few years in the care and treatment of diseases, and particularly in the field of therapeutics.

The most encouraging sign of the ability and determination of scientific medicine to continue

its progress is the accomplishments that have been made in the last few years.

We believed after the discovery of insulin for diabetes, liver for pernicious anemia, and the field of serums so successfully exploited, that the chemical experimental and research laboratories would not be able, for a period of time, to bring forward soon again such brilliant discoveries. But now in the field of chemotherapy, we have newer remedies placed in our hands enabling us to successfully treat diseases that formerly tied our hands with almost 100 per cent. mortality.

Pneumonia: The age-old disease that has been the fear and scourge of the human race for centuries, that has taken such a high toll in its death-rate and has resisted all drugs and methods of treatment, has in the last half year been reduced from a death-rate of 41 per cent. to 7 per cent.

In *Pellagra,* the mortality has been reduced from 54 to 6 per cent.

The equinia type of *Encephalitis,* which is known to affect human beings, is now almost definitely known to be due to the Culex mosquito.

Without government interference subsidizing medicine and forcing it under the control of lay organizations to suppress individual initiative effort, I believe scientific medicine will go forward with continued intensive organization to fulfill its destiny to the American people.

I believe all of these problems are going to be carefully studied by the medical profession, that we may influence our law-makers and prevent legislation that will restrict the continued advancement of medicine in America, or in continuing our administering to all classes of society as we have done in the past.

Whatever our problems of the future may be, let us keep step in the ranks of organized medicine by having every eligible graduate of medicine become a member of his county medical society, and conduct our affairs one with another that our lines of defense may not be broken by internal strife and dissension, or unfair conduct of practice in our dealings. With this determination we will be able to successfully defend our profession from regimentation and socialized medicine.

The medical profession, with all of its many specialties, is after all combined under one great organization for the same purpose of ever increasing our knowledge of the most successful manner of curing and controlling disease.

This great heritage medicine bestows upon one who has chosen to devote a life to learning the approved truths and knowledge to combat disease, and by study to add to this knowledge his own contribution to the future of medicine for the benefit of his fellowmen.

THE ADVANTAGES OF THE PHYSIOLOGICAL VIEWPOINT IN MEDICINE

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The age-old objective of medical care has been treatment which will give symptomatic relief even if it does not prove curative. The physician of today is just as conscious of this compelling objective as his predecessors and he is searching for new and helpful approaches to the problem. In the pursuit of a program one should occasionally examine critically the tools, methods and modes of thought which are being used. This is the purpose of the present discussion.

Clinical Pictures. The setting up of clinical pictures was one of the earliest attacks on a disease entity. The patients were questioned carefully, an accurate history obtained, and a meticulous physical examination made. Many such individuals were studied, the inconstant findings eliminated, and the descriptive grouping of symptoms and findings remaining were woven into the clinical picture. In many instances the picture was painted so accurately that it has been changed little during the subsequent years. To the disease entity was attached the name of the physician who first described it. Thus we have the origin of Bright's Disease, Addisonian anemia, Henoch's purpura, Laennec's cirrhosis, Hanot's cirrhosis, and many other diseases. The immediate impetus of study continued in these descriptive lines and in the search for cases that could be classified as falling under one or another class. The evolution of the clinical pictures was observed. Once a patient was classified, his disease was expected to evolve along the channels previously described.

Anatomical Basis for Disease. Under the leadership of Osler the study of the anatomical background which gave rise to the clinical picture was popularized. The physician who observed in the autopsy room a mitral valve stenosed

Chairman's address, Section on Medicine, Illinois State Medical Society, Rockford, May 3, 1939.

down to a button-hole opening could easily understand why the patient's fingers were cyanotic, his liver large and the chest filled with rales. The blood could not get through the small opening sufficiently rapidly. Pulmonary edema and passive congestion of the liver resulted. If, again, one examines the colon in a case of far advanced ulcerative colitis, he finds that the mucosa has been largely destroyed and the wall of the gut has been infiltrated with infection. It can be seen at a glance that it is impossible to return the organ to a normal state.

So more and more examples could be cited of the great contributions of pathological anatomy to the treatment of diseased processes. In many other conditions the disease has destroyed its victim without leaving anatomical changes by which it could be identified. The pathologist then has to be content with the report that death was caused by patho-physiological rather than by patho-anatomical agents. The anatomists and zoologists were formerly content to study and describe structure and form as it was observed. More recently they have become experimental anatomists and zoologists. They modify structure and change one form into another. The same transformation is occurring in pathology and medicine. Our objectives have become the study of physiological and biological processes.

I wish to present illustrations of how the physiological approach has simplified the understanding of disease and harmonized many apparently unrelated findings.

The Thyrotoxic Patient. The thyrotoxic patient presents a good illustration. His clinical picture can be resolved into three components.

The prostration component includes muscular weakness, prostration, easy fatiguability and weight loss.

The intoxication component comprises the nervous manifestations, the sleeplessness, restlessness and the crisis. Under the circulatory component may be listed the throbbing, pounding rapid heart, the flushed skin, the pulsating arteries and later in the disease the failing circulation with a decompensating heart.

These symptoms are widely divergent and at first would not seem to be due to a common etiologic factor. If, however, one realizes that the picture simplifies itself. Thyroxin regulates the speed at which chemical reactions occur within the body. It furnishes the energy to drive them. Thus it cannot synthesize proteins and form them into complexes which occur during the growth process. This is the function of the growth hormone of the anterior pituitary. It can, however, furnish the energy to drive these reactions. If now one applies the facilitation the disease is due to an increased secretion of a normal physiological constituent (thyroxin) then to all the metabolic processes he has an understanding of the thyrotoxic state. The prostration phenomena may be attributed largely to the depletion and exhaustion of fuel reserves. After the glycogen and fat are metabolized the proteins are requisitioned. Thus the muscles are katabolized and their atrophy and wasting is observed clinically. In the urine is found creatin, a by-product of muscular destruction. These symptoms are promptly relieved by the simple expedient of feeding the patient sufficient food for his increased requirements. For the symptoms of intoxication we have no such simple antidote as food. The nervous system is being driven at a furious rate. There is no poison to be neutralized. The nerves are responding to a normal stimulus. One's only alternative is to decrease the responsiveness of these nerves by the use of sedatives. Sedatives then become the drugs of choice rather than drugs to be avoided.

When one considers the circulatory system he is confronted with the question of "What is the goiter heart?" Obviously the goitre heart is only an overactive heart. If a patient with a normal heart develops thyrotoxicosis, the rate will be rapid, the beat forceful and the apical sound loud, vigorous and of a crescendo character. If the patient has a mitral stenosis and thyrotoxicosis, the over-activity leads early to signs of congestive heart failure. If the patient has arteriosclerotic heart disease the thyrotoxicosis may manifest itself by attacks of nocturnal dyspnea or cardiac asthma. Hence there is no characteristic clinical picture presented by the goiter heart.

The surgeon is often puzzled as to when a patient becomes a satisfactory operative risk from the cardiac viewpoint. This, of course, is not a simple question. However, there is a helpful objective test of cardiac decompensation which has been obtained from the physiologists. I refer to the test for vital capacity. This measures directly the maximum air capacity of the lungs, and inversely the quantity of blood and

fluids in the pulmonary vessels. If the vessels are engorged and the alveolar walls edematous, the vital capacity is low. With improvement in the circulation the capacity rises. A capacity of less than 50 per cent. indicates a poor state of compensation providing other causes of pulmonary pathology have been eliminated.

The Patient with Steatorrhea. The far reaching physiological effects of steatorrhea are not generally appreciated. These individuals exhibit at first bulky foul smelling clay colored stools of pasty consistency. As the condition progresses the stools become more frequent in number and of watery consistency. Droplets of oil are seen floating in the water. If there is an adequate quantity of pancreatic lipase then the stool consists chiefly of calcium salts of fatty acids (soaps) and some undigested neutral fats. The fatty acids are irritating and they produce the diarrhea. With an absence of lipase then the fat is not digested and appears in the stools largely as neutral fat. In this form the fat is less stimulating and the diarrhea less marked. The first condition has been described clinically as "Idiopathic Steatorrhea, Non Tropical Sprue or Celiac Disease." The second condition appears chiefly in pancreatic disease with the exclusion of the pancreatic juices from the bowel. Clinically a case of idiopathic steatorrhea shows the following conditions:

(a) Marked emaciation, muscular weakness, and an obvious pallor suggestive of an edema.

(b) Numbness and tingling in hands or feet with or without alteration in reflexes.

(c) Nausea, often vomiting, diarrhea which is usually painless.

(d) Anemia with a reduction or absence of free acid in gastric juice.

(e) Decalcification of skeleton with low blood calcium and occasional attacks of tetany.

(f) Edema of dependent parts, ascites, low blood proteins with often a reversal in the serum albumin and globulin.

(g) Low metabolic rate and cessation of growth if patient be a child.

Suppose we reconstruct the steps in the development of the clinical picture. The unabsorbed fatty acids produce the diarrhea. The diarrhea in turn produces nausea and vomiting and prevents further absorption of all types of food. Failure to absorb sufficient calories gives rise to emaciation and muscular weakness. Failure to absorb foods containing Vitamin B gives rise to further bowel irritability and the neuritic symptoms (numbness, tingling and alteration in reflexes). The free fatty acids must have some base to neutralize the acid. They commandeer the calcium present in the gut and then requisition supplies from the blood stream. As the blood calcium drops the symptoms of tetany appear. To maintain the blood calcium the bones become decalcified.

After the inanition has continued for a sufficient period, the reserves of serum albumin become depleted and a nutritional anemia appears. If the deficiency is not great, there is a mild degree of subcutaneous edema! if greater, then the accumulations of fluid is larger and ascites appears.

The lowering of the metabolic rate and cessation of growth is caused by the under nutrition. If the condition has not progressed too far the individual may be restored to normal by reducing the fat in the diet to the point where it can be absorbed. This stops the diarrhea and initiates absorption of other essential food elements. Even the metabolic rate returns to normal without the use of thyroid.

When the case is unusually severe, then the recovery can be hastened by parenteral use of liver extract, vitamin B_1, Calcium and blood transfusions.

Problems in Field of Cardiology. Workers in the field of cardiology are now insisting that it should more properly be designated the field of the circulation. Although the primary defect may be in the heart, often the patient is improved by directing attention to other factors in the circulation.

Cerebral Anoxemia. Thus a man has a coronary occlusion, some four weeks later he develops difficulty in sleeping and becomes disoriented and at times actively delirious. He is given one of the barbiturates and as time passes larger and larger quantities of the drug are required to control his delirium. Finally he is admitted to the psychopathic hospital. The delirium is promptly relieved by the administration of oxygen and the withdrawal of the barbiturates. There was no obvious cyanosis

and so it was not appreciated that his symptoms were attributed to a cerebral anoxemia.

Increased Blood Volume. The patient who is on the border line of a decompensation but who actually does not show any of the classical signs of it may still be quite uncomfortable. He complains of stuffiness, abdominal fullness, and a little dyspnea. If that patient is placed on the acidifying salts and given a dose of mercurial diuretic he promptly loses these symptoms with the establishment of a diuresis. Studies made in such patients have shown that they have an increased blood volume, even though there is no edema. This volume is reduced by the diuretics and with the reduction all of the symptoms are relieved.

The Shock State of Coronary Occlusion. A man develops a coronary occlusion and promptly goes into a shock-like state with a widely dilated vascular bed. The blood pressure drops sharply. The volume of blood is inadequate to fill the vessels and the heart beats more and more rapidly in an attempt to maintain its output in the face of an inadequate venous return. One would prefer to reduce the vascular bed rather than to fill the enlarged bed and increase the blood volume. Under these circumstances small repeated doses of adrenalin may prove a life saving measure. The adrenalin facilitates an increase in arteriolar tone and in small doses dilates the coronary vessels. One, of course, must be careful to avoid the larger doses of adrenalin which may produce an anginal attack. In this particular situation the blind routine stimulation of the heart because the pulse is rapid is futile, and may lead to trouble.

Noctural Dyspnea. One further example of the advantages of the physiologic viewpoint is found in the common condition known as "nocturnal dyspnea and cardiac asthma." It is generally known that this condition arises as the results of acute left ventricular failure with a passive congestion of the lungs. What is not generally known is the aggravating effect of cough and deep breathing on this congestion. With cough and increase in respiration the right heart fills more rapidly and pumps more blood into the lung where a stasis exists from the left ventricular failure. Thus the cough and deep breathing may actually induce a severe pulmonary edema or aggravate a pre-existing one.

Various explanations have been offered as to the mechanism which initiates the attack. Some of these are bad dreams, a full bladder, indigestible food and the assumption in bed of a position which mechanically embarrasses the heart action. Not infrequently arousing the patient from his sleep just before the time of the expected attack will prevent it. However, the administration of oxygen during the sleeping hours is a specific preventative measure. This insures adequate oxygenation and prevents the acute left ventricular failure.

Polycythemia. A final example will be selected from the field of hematology. The patient with polycythemia may have a red blood count of 8 to 9 million cells and a hemoglobin of 19 to 20 grams. The red cell production is so great that the volume of cells per cubic millimeter is not only well above normal, but there is actually an increase in the blood plasma required to incorporate the cells into circulating blood. This increased blood volume may easily be 30 to 40 per cent. above normal. Various methods (phenyl hydrazine and x-ray) have been used to destroy the cells after they have been found, and offer the patient symptomatic relief. Such agents have to be used repeatedly to be of any value. One of my associates has arrived at a much more fundamental solution of the problem. In the myxedematous state there is a reduction in thyroxin and a consequent failure in erythropoiesis. This is shown by the pronounced anemia in the peripheral blood and the reduction in the erythroid tissue in the bone marrow. If the polycythemic patient is made myxedematous by a total thyroidectomy, he should be cured. This has been done and the cure has been accomplished.

This analysis of disease processes rather than the end results of disease has served two purposes: It has stimulated and vitalized the medical worker because the results make obvious the corrective treatment required. In the second place it has stimulated physiologists to study physiology in the human subject rather than in the animal. The medical man is required to learn again his physiology and the physiologist must become medically conscious.

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PROGRESS IN OPHTHALMOLOGY

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The Surgery of Retinal Detachment. Probably the most outstanding achievement in ophthalmology during the past fifteen years has been the operative treatment for retinal detachment. Prior to 1929, the usual so-called conservative treatments, consisting of bedrest, bloodletting, subconjunctival injections of irritant solutions, etc. probably did not result in better than a one to two per cent. cure. The hopelessness of the prognosis was very discouraging.

We must thank Gonin of Lausanne for whatever improvement in therapy and ultimate prognosis has been made. In 1929 he reported his first series of 100 cases treated by means of his thermocautery method. He reported better than 33% cures, and made us "tear" or "hole" conscious. He was able to localize holes or tears of the retina in better than 90% of the cases examined, and correlated the presence of a retinal hole with the etiology of retinal detachment. This certainly improved our diagnostic acumen in the examination of retinae, so that today even ophthalmological internes and neophytes are able to discern the presence of retinal tears.

As the operative treatment became more universally practiced, it was found that thermocautery surgery of the retina was not without serious complications, such as severe intraocular hemorrhages, necrosis of sclera, marked vitreous strand formation, etc. This led to further experimentation, and in 1930 Vogt of Zurich announced his galvanocautery technique, by means of an electrocautery. This method improved the number of cures reported, and decreased the number of postoperative complications. It was still necessary with this method of procedure to localize and hit the tear accurately with the cautery point. At that time most of us still had difficulty in the actual localization of the retinal tears, and our number of successful cures was materially reduced by our inability to hit the tear accurately.

In 1931 Larrson announced his development of the use of a diathermy current, using a ball electrode and surface coagulation. By this method one did not have to localize the hole so carefully, as the coagulating current could be safely applied over large areas of detached retina without much danger to the eyeball. Shortly afterward, Weve began to use short, sharp needles with a diathermy current, perforating through the sclera in places, to allow drainage of subretinal fluid so that the retina could drop back in place and adhere to the underlying choroid. Safar and Walker then advocated the use of individual pins which were pushed into the sclera and then had a diathermy current applied.

Guist and, later, Lindner, advocated multiple trephine openings through the sclera, and then applied weak solutions of potassium hydroxide to the exposed choroid. This method was rather time-consuming, and the amount of reaction desired in the choroid could not be accurately regulated as the alkali usually spread too far from its point of application.

Vogt in 1935 used a sharp needle connected to the negative pole of an electrolysis current. This is now called "catholysis." This current gives off bubbles into the vitreous body, which can be easily seen with an ophthalmoscope, and can be used first as an aid in localization of the tear, and then as a means of treatment. It may also be used in combination with the single needle diathermy method.

During the past ten years, we have been able to evolve our present technic, which consists of accurate hole localization, the use of the diathermy current for flat and perforating coagulation, catholysis, etc. We are now able to localize tears in a much greater number of cases, seal the tear present, and promise the patient a favorable cure in 33-75%. The number of cures reported will steadily rise as our technic is improved.

Keratoplasty or Corneal Transplants. Keratoplasty, or corneal transplantation, is the operative replacement of damaged corneal tissue by healthy corneal tissue. The operation is indicated in cases of corneal opacities or corneal irregularities, such as keratoconus and keratectasias.

In 1877, Von Hippel, described his technique of circumscribed penetrating keratoplasty. The method has never become popular, probably due to the technical difficulties involved. Between the years of 1920-1930, six papers were published in the Elschnig clinic, giving the end results in about 140 cases. The author who had seen twenty-seven of these cases performed while working

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Chairman's Address, Section on Eye, Ear, Nose, Throat, Illinois State Medical Society, Rockford, May 3, 1939.

as an assistant in this clinic, knows at first hand the difficulties and uncertainties involved. Filatow published his series of cases between 1925 and 1930.

Castroviejo in 1932 elaborated upon the technic already in use, by using a double bladed knife instead of the 4 mm. circular trephine of Von Hippel. A rectangular corneal flap is used. His results have been very gratifying, especially in favorable cases. The technique can be mastered by the average good surgeon.

One of the most difficult problems involved has been in regard to the material for transplantation. Filatow has evolved the method by which eyes enucleated from patients or eyes of cadavers enucleated shortly after death can be used. The cadaver eyes have to be enucleated, according to Filatow, within a few hours after death. They may be used immediately after enucleation or preserved in citrated blood from the person from whom they were obtained, and kept at a temperature of from 4° to 6° C. above zero, to be used from twenty to fifty-six hours after death. Filatow found the corneas obtained from cadavers, even those preserved for a long time, to be just as good as those taken from living persons.

Fundus Photography. The Nordenson camera has been used since about 1926 for photographing the fundus. This has given us a method of recording accurately the changes in the fundus as seen from time to time. The real value of this method has been greatly enhanced recently by the use of Kodachrome film, so that pictures may now be made in color.

Sulfanilamide in the Treatment of Trachoma. At the last meeting of the Section on Eye of the American Medical Association, just about a year ago, one of the field workers from the Department of the Interior reported on the successful use of sulfanilamide in the treatment of trachoma amongst the Indians. Several months before this report was made, we used this therapy experimentally in a group of 25 patients who were under the control of the management of the trachoma clinics in Southern Illinois. We purposely had picked some of our most refractory cases, i. e., those who had complications such as pannus formation, keratitis, corneal ulcers, etc. We were astounded at the success we had obtained in the majority of these cases. The work was very carefully carried out under the direct supervision of an ophthalmologist who was especially versed in the treatment of this disease. The results were also reported at the Eye Section meeting. Since then, we have been employing this drug rather frequently amongst the older cases, many of which had been refractive to all other forms of therapy.

Simultaneously with the experimental group under observation down state, we ran a similar series receiving the same treatment at the Illinois Eye and Ear Infirmary. Our results were as satisfactory as those reported in Southern Illinois. During the past year, it has been found that sulfanilamide has no beneficial effect in Type I, i. e., the early form of the disease, but it has a definite beneficial value in Types II and III. The therapy consists of one-third grain per pound of body weight, divided into four or five doses for the first three or four days, after which time the dose is cut in half for the following five to seven days. Lately, we have found that a drug called prontosil, which is a derivative of sulfanilamide, acts just as well and has considerably less toxic effect upon the patient. One must be careful in using this drug, to avoid the toxic effect which sometimes occurs when the patient has an idiosyncrasy toward the drug. If toxic manifestations occur, administration of the drug should be stopped immediately. With proper care in the administration, no harmful results should occur.

Sulfanilamide in the Treatment of Gonorrheal Ophthalmia. Sulfanilamide is of great value in the treatment of gonorrheal ophthalmia when combined with adequate local therapy. Best results are obtained when a high blood sulfanilamide concentration is achieved early in the treatment and maintained long enough to secure negative eye smears.

The general treatment consists of sulfanilamide and supportive care. Sulfanilamde is given in doses of 15 grains for every 20 pounds of body weight, divided into six doses and given every four hours. One fourth to one half the twenty-four hour dose is given on admission. When given subcutaneously a 1% solution of sulfanilamide is used: 100 cc. for every 40 pounds of body weight, given every 12 hours. The concentration of sulfanilamide in the blood should be kept above 5 mg.%. These maximum doses are given until negative eye smears are obtained and the eye is obviously improved. The dosage is then gradually decreased in a period of three

days to about one third the original amount and continued on the lowered figure for another seven to ten days. This is done to prevent relapse. When acidosis is impending, sodium bicarbonate is given by mouth in the same dosage as the sulfanilamide. To detect impending acidosis, the urine is checked daily with nitrazine paper. Complete blood counts are made daily the first three days and then every third day to discover any idiosyncrasy to the drug.

Mecholyl and Prostigmine in the Treatment of Glaucoma. Most authors on glaucoma believe that miosis frees the angle of the anterior chamber and thus facilitates passage of aqueous through Schlemm's canal. In addition there may be involved specific action on blood vessels and on the formation of aqueous, since these miotics have sometimes been found to reduce tension in the glaucoma of aniridia, in secondary glaucoma with blocked pupil, and in long standing chronic glaucoma with completely closed iris angle. Their action in these cases is not always dependable.

For many years pilocarpine and eserine, occasionally combined with adrenaline, have been used in the successful treatment of glaucoma. Recently a series of cases has been reported, in which mecholyl (methylbeta-acetylcholine-chloride) sold by Merck and Company, and prostigmine ($(CH_3)_2N.CO.OC_6H_5N(CH_3)_3SO_4CH_3$) sold by Hoffmann-LaRoche Company, have been successfully used in the treatment of glaucoma.

Physiologically, acetylcholine is a rapid-acting, strong miotic, although its effect is of very short duration. Clinically, it is not practical to use acetylcholine because its action is too evanescent. For this reason, a synthetic drug, mecholyl (Merck), intimately related both chemically and physiologically to acetylcholine, has been used. It is similar to acetylcholine in action, but is much more powerful and its action persists for a much longer period. Furthermore, it is devoid of the so-called "nicotine" effect of acetylcholine. It is a direct physiological antagonist to adrenaline and atrophine. The systemic effects of mecholyl may be instantly abolished by means of 1/100 grains of atropine sulphate given intravenously; and over a period of 5 to 10 minutes, if the atropine is given subcutaneously. Mecholyl is without the dangerous mydriatic action of adrenaline and it has the decided advantage of being a strong miotic. Recently, its action as a synergist to another new drug—prostigmine—has been found to be most effective. It will bring down the tension in acute glaucoma so that surgery is more easily and safely done, and when the general blood pressure and intraocular vascular blood pressure do rise, one-half to one hour later, the blood vessels are relatively constricted as the pressure rises.

Although mecholyl alone has a rather evanescent action, it may be used to advantage over long periods of time as a synergist, of eserine, pilocarpine or prostigmine.

Prostigmine has a pharmacological action similar to that of eserine; namely, that it inhibits the action of "A-C"-esterase. It differs from eserine in that it does not cause so much unpleasantness locally to the patient, has a stronger miotic action, and will not deteriorate as quickly as eserine. In addition, it can be used in twice as strong a concentration as eserine and causes less sytemic reaction, such as nausea, when employed frequently as drops. The miosis it produces is usually greater than that caused by equivalent concentrations of pilocarpine and eserine, especially if used in conjunction with its most marked synergist—mecholyl.

Theoretically, a maximum miosis, or tendency towards producing miosis, would be obtained by using:

1. Mecholyl to stimulate the sphincter muscle directly,

2. Prostigmine, to inhibit esterase from destroying both the mecholyl and the normally produced acetylcholine,

3. Pilocarpine for its specific action on the sphincter muscle. One might even use ergotamine tartrate subcutaneously, in addition, to paralyze the sympathetic and allow the others an absolutely free range.

For chronic use, to avoid unpleasant symptoms, similar to those caused by eserine, it is occasionally necessary to use 10% mecholyl and 3% prostigmine, instead of the 20% mecholyl and 5% prostigmine used in acute cases.

A good routine treatment for a case of acute congestive glaucoma with mecholyl and prostigmine might be outlined as follows:

1. Morphine gr. 0.25, subcutaneously, if pain is marked.

2. Mecholyl 20%, prostigmine 5%, 1 drop a. a., given every 10 minutes for seven doses. If the tension does not approach normal after one and one half hours, then inject retrobulbarly,

preferably with a retrobulbar No. 25 needle and tuberculin syringe; 0.025 gm. of mecholyl in 1 c.c. of 2% procaine.

3. Continue the drops for another five doses.

When prostigmine is not available, 0.5% eserine may be used instead, for its physiological action is similar to that of prostigmine.

Mecholyl has been used most frequently by the retrobulbar method for acute glaucoma only. This method of therapy seems to be a most effective medical way of rapidly reducing high tension in acute glaucoma whether it be primary or secondary in nature.

We are at present using these two new cholinergic drugs on a series of glaucoma patients at the Illinois Eye and Ear Infirmary.

Graduate Training in Ophthalmology. Postgraduate training in ophthalmology as it is being offered today is certainly far from satisfactory. There are neither an adequate number of teachers nor clinics or hospitals where this work can be carried out. The question of adequate graduate training is now even more complicated, due to the demands and requirements for the specialty board examinations.

The opportunity to obtain an adequate graduate training for men who are to do eye, ear, nose and throat practice in the smaller communities throughout the United States is at present most inadequate. There are not enough internships or residences available to fill the demand.

To reconcile the ideal situation with the present inadequate situation, the American Academy of Ophthalmology and Otolaryngology has committed itself to a course in home study in ophthalmic fundamentals for residents in institutions in which there is no teaching being given at present. This will be conducted similarly to the home study course that has been so successful in the training of reserve officers in the United States Army. The course will be offered gratis to the residents of institutions signifying a desire to participate and to such men as may be recommended for the course by the American Board of Ophthalmology. On the first of each month there will be sent to each registrant a list of reading to be carried out that month. At the end of that time a blue book quiz containing 10, 20 or 30 questions will be sent to him. He is to answer those questions in any way he sees fit and return the blue book to the Academy Committee who will correct, grade and return it to the registrant. The work is planned to start in six to twelve months from now, and to carry through fifty weeks. This is not ideal in any sense of the word, but it is merely a plan to fill the gap intervening between the present hopeless inadequacy and the ideal situation of the future.

58 East Washington Street.

OSTEODYSTROPHY

Osteomalacia Osteopetrosis (Marble Bones)

Report of Several Cases

HARRY OLIN, M. D.

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In the last ten years there has been a growing interest in diseases affecting the skeletal system and demonstrating definite pathological changes in bones. The etiological factors are still obscure although clinical evidence and data have brought to light much more added information, and a wider knowledge of many variations in some of the entities. For want of a better name, this group has been classified as the *osteodystrophies*, which probably best describes it at this time. This group of bone diseases may be generally characterized as disorders of calcium metabolism and ossification which play an important role in the growth of bone. In addition to disorders of calcium metabolism and ossification, some of the endocrines are intimately connected, but their relationship and method of function are still clothed in obscurity. Among these diseases may be grouped the following:

1. *Osteitis fibrosa cystica* (Von Recklinghausen's Disease) Local cystic disease of bone is another entity.
2. *Osteitis deformans* (Paget's Disease)
3. *Osteomalacia*
4. *Rickets*
5. *Osteogenesis imperfecta* in adults
   a) Fragilitas ossium
   b) Osteopsathyrosis
6. *Achondroplasia*
7. *Hereditary chondrodysplasia* (multiple cartilaginous exostoses).
8. *Osteopetrosis*—Marble bones (Albers-Schöenberg's Disease)

Osteomalacia. We shall confine our remarks principally to osteomalacia and marble bones. In North America osteomalacia is essentially a rare disease, although considered fairly common on

Read at Illinois State Medical Society, Rockford, Illinois, May 3, 1939

the continent. During and after the World War, its incidence increased in many of the European countries and became fairly common. Starvation and a greatly reduced diet in food essentials are considered several of the main factors concerned with its incidence. In China osteomalacia is a fairly common disease even during peaceful conditions. For many years it was confused with osteitis fibrosa cystica, but osteomalacia is most clearly allied to rickets. Osteitis fibrosa is an endocrine disorder intimately hooked up with the activity of the parathyroid gland, whereas rickets and osteomalacia are deficiency diseases, the former occurring in children, and the latter in adults. Due to parathyroid activity, calcium is removed from bones; whereas in rickets and in osteomalacia calcium is not laid down in bones owing to lack of vitamin D—one of the prime regulators of calcium metabolism.

The disease affects those in middle life, and in the main is confined to pregnant women, or those exhausted by repeated child births: occasionally it is found in males. Osteomalacia affords a good example of the difficulty of drawing conclusions regarding the osteodystrophies. Secondary hyperplasia due to enlargement of the parathyroids occurs in an attempt to halt the deficiency of calcium in the bones, and the same hyperplastic changes in the parathyroids take place in rickets.

Roentgen Manifestations: The bones commonly affected are the pelvis, lumbar vertebrae, and the bones of the legs. From its name "bone softening," the bones are easily cut, or bent, due to loss of calcium salts. On roentgenograms, they present a faint and lace-like appearance. The trabeculae are faint and frequently cannot be traced along the length of the bones. Due to its softness, in the pelvis, the promontory of the sacrum is pushed forward and the acetabulae are pushed inward, causing marked deformity and distortion of the pelvic inlet which is narrowed, and making normal birth impossible. Due to softening, the bodies of the vertebrae are compressed and distorted causing diminished height. Then ensues deformity, disc changes, spur formation, and secondary spinal curves. In the legs, marked bowing occurs.

Clinically the symptoms most prominent are generalized pains over the entire body, and weakness. Pathological fractures may occur due to bone softening. Deformities may be present which add to the clinical picture of recognition. Microscopically, normal bone is replaced by newly formed bone—osteoid tissue—in which there is lack of lime salts.

Case I. Herewith is presented the following case in a male:

C. P., age 38; Admitted to Woodlawn Hospital, 11/22/38; Case number 33186; Service of Dr. Thomas F. Doyle.

Chief Complaint: Irregular pains coming on at varied intervals over various parts of the body, and in the lumbar regions for the past six months.

Past History: Prior to seven years ago, patient had no complaints. Seven years ago had typical symptoms of renal colic on left side, and passed a stone. Had hematuria at that time. Was free of symptoms the next five years. Two years ago developed irregular body pains which appeared and disappeared; pains greater on right side, and of an aching character. No local pathology or tenderness elicited.—Pain not exaggerated on walking. This attack lasted two weeks, when he had another attack of pain in the lower abdomen—suprapubic region, with no gastrointestinal, or urinary difficulties. Pain exaggerated on breathing, coughing, or bending body—as in assuming sitting position when in bed. No pain felt on pressure. No jaundice, colic, or clay-colored stools. For the past six months has been having attacks of dull, aching pain in left groin and lumbar region.—No radiation to thigh. No history of renal colic. Has recurrence of pain in lumbar region and chest, exaggerated on bending back, and sitting up. Denies all diseases, except skin eruption on face for many years—*acne rosacea.* Had all teeth removed three months ago because of many apical abscesses.

Family History: No children—one child lived fourteen days, cause of death unknown.

Habits: Essentially negative. Drinks mildly.

Summary: History of renal calculus seven years ago. He passed stone at that time. Has vague symptoms at present time, mainly of left loin, lumbar spines, and chest.

Physical Examination:

Male, obese—weight 185 pounds; pulse 72; blood pressure 150/110.

Red face—*acne rosacea.*

Head, eyes, ears—negative.

Neck—no adenopathy; no thyroid enlargment.

Lungs—negative.

Heart—negative.

Abdomen—obese wall; no nausea; no tenderness; liver and spleen not felt.

Posteriorly—left kidney tender on fist percussion.

Suprapubic region—negative.

Extremities—negative. No Romberg's; Babinski negative.

Laboratory urine negative.

11-23-38 Blood count

White blood count 9,000

Red blood count 5,240,000

Hemoglobin 90%

Polymorphonuclears 79%

Small lymphocytes 21%

Wassermann negative.

Kahn negative.

11-26-38 Blood calcium 9.8 mg per 100 cc.

12-7-38 Blood culture negative after two weeks incubation.

11-25-38 Further history:

October 1936 fell and fractured right wrist.

June 1937 acute pain throughout chest with sudden onset, which continued until the present time. Seven weeks ago sudden onset of pain in mid-lumbar region —acute in character.

Roentgen Findings: (12263)

Flat G. U. T. The bones of the lumbar spines and pelvis show an unusual amount of atrophy, much greater than is seen usually in a man of 37 years of age. There is compression of the bodies of the first and second lumbar, which is very suspicious of Paget's Disease of the lumbar spines. No shadows of any stones are seen. Intravenous urography is recommended to determine the function of the kidneys.

Paget's Disease, if clinically suspected, suggests examination of the skull and long bones.

Skull. In the upper one-third of the skull is a suggestive granular appearance of the bone grain, but this is not typical of parathyroidism. No changes in the skull are suggestive of table thickening.

Dorsal Spines: Moderately extensive osteoarthritis is seen in the bodies of the dorsal vertebrae. There are multiple healed fractures of the ribs on both sides—on the right side there is still evidence of callus formation surrounding the fractured areas, especially involving the eighth to the tenth ribs posteriorly.

On the left side there are also fractures of the fourth to the seventh ribs, inclusive—some of which show partial union. On the right side there are healed fractures of the posterior ribs of the third to the fifth inclusive, and the seventh and eighth likewise,—all with deformity. Many of these represent a roentgen characteristic of pathological fractures.

Lumbar Spines: The characteristic feature is the distortion with bone atrophy of the lumber vertebrae, especially the upper three. These variations are very suggestive of pressure changes involving the body and the discs. Moderate spurs are seen on the bodies of these vertebrae, which are secondary arthritic spurs due to disc changes. In the lateral view there is corresponding distortion of the bodies with marked disc changes.

Long Bones: In the long bones of the thighs and legs the bone architecture is essentially normal in both the tibia and femur.

Pelvis: The outstanding characteristic, in addition to the sacralization of the fifth lumbar, is the bone atrophy. The roentgen appearance shows definite pathology in the lumbar spines, prolonged pressure changes, the etiology of which is not readily determined; associated with multiple fractures of the ribs on both sides which are probably pathological.

The conditions to be considered are:

1. Osteomalacia
2. Paget's Disease
3. Pituitary tumor
4. Multiple myeloma
5. Parathyroidism.

Osteomalacia is probably the most likely.

Comment: The generalized weakness and body pains coming on over a period of two years in seveal attacks in a mature adult, suggests bone changes, particularly where the pain is aggravated on motion, as in deep breathing (indicated by multiple fractures and which show deformity and healing) and in sitting up, or walking, adding more weight to the spinal column and causing the pressure deformities in the lumbar region. The roentgenograms further demonstrate, bone sottening, atrophy and pressure deformities consistent with the entity known as *osteomalacia.* The absence of cystic bone changes and the normal blood calcium rule out *osteoitis fibrosa cystica.* Absence of bone changes in the skull and long bones rule out *Paget's disease.* A normal sella turcica and absence of pituitary tumor symptomatology, rule out pituitary tumor.

Osteopetrosis—Marble Bones (Albers-Schöenberg's Disease)

Of all the osteodystrophies, this can be considered the rarest. It occurs mostly in infants and children, although Reiche described a case in a man 37 years old. The average age is between 12 and 20. Tyler and Simonds in a written communication mention a case of a young woman 23 years o'd who was pregnant three months (second pregnancy) and who exhibited *marble bones,* (Ref. 2). She entered the hospital under the service of Dr. Harley Anderson and reported this diagnosis. Her entire skeletal system was x-rayed by Dr. Tyler except the distal phalanges of the hands and feet, and all the bones were involved. Dr. Lockwood two years previously reported his complete findings on the same case as marble bones. The patient presented the following laboratory findings: normal blood calcium, cholesterol, and phosphorus with a red count of 3,800,000 and 75% hemoglobin.

The reason I am reporting my case is because of the rarity of the disease, and that the age of the patient is 72. About 65 cases so far have been reported in the literature (McClure and Bradley). The Roentgen picture is characteristic: normal bone trabeculae are replaced by a smooth homogeneous structure, wholly lacking the usual bone architecture, and has the appearance of chalk or marble,—hence its name. The bones lose their elasticity and fractures therefore become common. True ossification of bone lamellae and of osteoblasts is lacking, but excessive calcification occurs in osteoid tissue. All bones are dense, particularly the ends of long bones. In the cranial foramina narrowing results in optic atrophy, and other cranial nerve disturbances. Narrowing of the medullary canal leads to marked sclerosis, and anemia; hydrocephalus may be present. The teeth are usually poor. Enlargement of the liver and spleen usually occurs.

When pathologic fractures occurs, the patient usually first comes under observation, and recognition is simply a coincidence. Sometimes calicification about the ligaments occur and premature calcification of the vessels may take place. In the literature, transverse rings of

increased density, occurring at the ends of the long bones, have been described by some writers as characteristic of the disease. (Ref. 3) The children are, as a rule, poorly nourished, and are apt to die of some intercurrent disease. The cause of the disease is unknown.

In Selye's work, experimentally on animals, small doses of parathyroid extract (parathormone) are administered over long periods of time, and the bones assume similar appearances as in *marble bones.* This is explained on the basis that the increased bone formation is due to stimulation of the osteoblasts, whereas, theoretically, rarefaction is anticipated with loss of lime salts. (Ref. 1)

Case 2. Herewith is a report of case: No. 30080.

Mrs. L. K., married; age 72; born in Bishopstein, East Prussia; admitted to Woodlawn Hospital, 11/3/37; service of Dr. Lester Barnsback.

Present Complaint: One month ago the patient tripped over a carpet and fell; her left lower extremity was weak since the fall and it pained her to walk. On the day prior to admission her left limb "gave away" while walking, resulting in her being admitted the following day.

Obstetrical History: Five children; three living and two dead. One daughter is 48 years of age; one daughter age 40, and son 43, living and well. Two dead —girl twins; one child died shortly after birth, one died at the age of 16 from "flu" in 1918. Varicose veins for twenty years.

Family History: Husband's mother died in the 80's cause (?). Mrs. K's family: two brothers and self; both parents died when she was a young girl. She does not remember them and does not know the cause of death. Father died when she was 3 years of age, and her mother died when she was 8 years of age.

Past History: Small-pox as a child, does not remember any other illnesses.

Physical Examination: Only the positive findings are given. Moderate swelling of the feet and legs. The heart is enlarged both to the right and left, no murmurs; the pulse is 88, irregular and the rhythm is described as an "irregular irregularity"—auricular fibrillation. There is much swelling in the region of the left hip and considerable pain on the slightest motion. Blood pressure is 134/78. The liver is two fingers breadth below the costal margin. Abdomen—no masses, or tenderness; EKG—auricular fibrillation with considerable myocardial scarring on sclerotic basis.

Consultation—Dr. James J. Callahan

Very extensive case of marble bones with probable entire skeletal involvement. There is a sub-trochanteric fracture of the left femur with medial displacement caused by iliopsoas muscle.

Treatment: Continue the same as hip will develop callus formation, and have an excellent result in the *Schantz Osteotomy* position. Operative treatment is contraindicated because of patient's age and physical condition.

Blood Chemistry: Cholesterol 227; calcium 9.9; phosphorus 3.3. Patient enjoyed good health up to one year ago, and did her own housework.

Blood Picture. 11/4/37:
W. B. C. 10,500
R. B. C. 4,220,000
Hemoglobin 78%
Polymorphonuclears 80%
Small lymphocytes 20%
Wassermann Negative
Kolmer Negative

(accident 10-3-37) (12762-old 10687)

Roentgen findings: 11-3-37. Roentgen examination (stereoscopic A. P. plane) reveals a fracture of the shaft of the left femur at its junction with the trochanteric area, and with the long or distal fragment displaced posterior and just below the neck. Due to the fragment being driven upwards, the trochanter has ascended and is on a level with the upper border of the acetabulum. The right hip taken for comparison shows no evidence of fracture. In the pelvis, probably located behind the bladder filled with fluid, there is an oval shadow with a well defined left border which may be an enlarged pelvic organ; this area is contaminated with considerable detritus in the rectum.

The characteristic feature of this examination is the homogeneous appearance of all the bones which presents the greatest density. There is almost complete absence of bone trabeculation and very little bone marking is observed except very slightly in a portion of each iliac fossa. This marked condensation of bone has resulted in almost complete fusion in the left sacro-iliac joint and to a lesser degree in the right. The lumbo-sacral joint is almost completely fused. Some of the segments in the sacrum and coccyx, however, can be made out with the condensation at its minimum point here.

A. P. Lumbar spines: A similar process of bone condensation is seen in the bodies of the lumbar spines. There is almost complete fusion of the bodies of the lower dorsal and upper two lumbar. The bone trabeculation is lost, and the spinal canal is only seen in the body of the third lumbar. The ribs present the same process to a much lesser degree. The general condensation seen in these bones does not resemble that of *Paget's Disease;* neither is it consistent with *multiple myeloma,* or bone metastases from a malignancy disease.

The roentgen appearance is more consistent with a generalized osteosclerosis although this condition appears to be essentially a disease of children. Syphilis is also another possibility, but there is nothing resembling this now to make this a definite diagnosis. Osteosclerosis is, therefore, probably the first possibility to be considered.

Summary: Pelvis and hip joints.

Fracture of left hip below trochanter with deformity.

Lumbar Spines—A. P. plane.

Generalized marble bones (osteosclerosis) etiology undetermined. Other conditions mentioned above to be considered.

Schmidt (Ref. 4) prefers to separate cases occurring in infancy and early childhood from those of adult life. He believes that cases of *marble bones* in the adult type is accompanied by changes in the blood, and blood-forming organs (osteosclerotic anemia), changes

which govern the condition; whereas in the childhood type, skeletal changes are the most significant. According to Kramer and Halpert, they believe that changes in the skeletal system are so progressive that the affected children do not live long enough to acquire complete skeletal development. The case which I am reporting does not seem to bear out the contention of Kramer and Halpert. (Ref. 5)*

(Lantern slides shown to illustrate the several cases.)

Comment: Grateful acknowledgment is made to:

Drs. Thomas F. Doyle and *L. J. Barnsback* for the privilege of reporting these cases.

Note: A late note from the physician reports that today, several months after the accident, the patient has fair function of the hip and is walking about. (May 5, 1939.)

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RADIUM IN THE TREATMENT OF DISEASES OF THE SKIN

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In the writer's text-book "Radium Therapy"[1] published in 1922, Chapter XVII was devoted to Radium in Dermatology.

Since that time notable improvements have been made in the methods of using radium some of which we wish to describe.

Four topics will be discussed:—1, Method of actions of radium rays; 2, Technic; 3, Dosage; 4, Treatment.

1. METHOD OF ACTION OF RADIUM RAYS

The point of attack of radium rays (or x-rays) is the cell, particularly its nucleus. The absorption of rays by a cell disturbs its structure so that it loses first its power of reproduction and later its functional and anatomical characteristics. A return to normal or death and disappearance of the cell may occur, depending on the degree of injury.

Cells are most radiosensitive as they approach or pass through the period of mitosis.

The law of Bergonié and Tribondeau postulates that immature cells and cells that are actively dividing are more susceptible to x-rays than cells that have already acquired the functional and anatomical characteristics of complete maturity.

Clinical experience indicates that the same rule holds true for gamma rays. Not only tumors with little differentiation of cells and numerous mitoses but also embryonic and granulation tissue with high reproductivity of cells are thus radiosensitive.

There are exceptions, however, to the so-called law of Bergonié and Tribondeau.

Thus lymphoid cells have limited powers of reproduction but are highly radiosensitive.

In the order of their decreasing radiosensitivity cells may be arranged as follows: lymphoid, epithelial, endothelial, connective tissue, muscle, bone, fat, nerve. (Desjardins).[2]

About 80 affections of the skin are more or less amenable to radium and x-rays.

The main groups of dermatoses in which these agents have been used are:

A. Malignant tumors.
B. Benign tumors.
C. Hypertrophies.
D. Inflammatory and granulomatous infiltrations.
E. Neuroses.
F. Affections of appendages of skin.

An attempt will be made partly on theoretical grounds to explain the action of radium rays.

(A) *Malignant Tumors.* The radiosensitivity of tumor cells corresponds closely to the radiosensitivity of the parent cells from which the tumor cells spring. Thus lymphosarcoma springing from lymphoid cells is very radiosensitive while tumors composed of nerve cells are highly radioresistant.

In the radium treatment of malignant tumors one depends on two chief factors:

(a) Direct action of the rays on the tumor cells which are often more radiosensitive than the normal cells surrounding the growth. This radiosensitivity is believed by some to be due chiefly to the more rapid division of the cancer cell.

(b) Indirect action on the tumor bed, re-

sulting in obliteration of blood vessels, stimulation of phagocytosis and production of fibrosis.

It has been shown by animal experimentation that irradiation of the surrounding tissues in addition to irradiation of the tumor itself produces better results than when the tumor alone is treated.

Clinical experience corroborates these experiments. We no longer try to screen off the surrounding tissues with lead or gold screens but we always include in the irradiation all of the area adjacent to the tumor provided the anatomical conditions permit.

For the best effects of radium there should be a good substratum of well vascularized muscular and connective tissue supporting the tumor.

(B) *Benign Tumors.* Certain relatively benign tumors such as adenoid cystic epithelioma in which the cells are mature and not actively dividing are somewhat radioresistant.

Angiomas composed chiefly of newly formed blood vessels are radiosensitive and very striking results may often be achieved with radium.

The cavernous angioma in which cells of the vessel wall are embryonic in character and rapidly dividing is more radiosensitive than the port wine type of angioma in which the cells are more mature and dividing less actively.

Keloids that are young, rapidly growing and composed chiefly of actively dividing connective tissue cells are more radiosensitive than keloids that are older and composed of more mature connective tissue cells.

Fibromas, lipomas and neuromas are practically not influenced by irradiation.

(C) *Hypertrophies.* These are often associated with hyperkeratosis. Irradiation stops excessive reproduction of cells and the hyperkeratotic areas exfoliate.

(D) *Inflammatory and Granulomatous Infiltrations.* These may be due to bacteria, e.g., tubercle bacilli or to various other causes, many of which are unknown.

Bacteria in the tissues are practically not affected by therapeutic irradiations.

Bacteria in cultures may be killed by sufficiently large doses but such doses cannot be used therapeutically without seriously injuring the tissues.

The most probable explanation of beneficial results in bacterial diseases is that the effect of irradiation is not directly on the bacteria but on the sensitive cells of the skin or its appendages and on the infiltrating leucocytes so that antibodies and ferments are liberated and fibrosis stimulated.

A similar explanation may be invoked for other inflammatory and granulomatous infiltrations.

(E) *Neuroses.* Relief of pain under irradiation is probably due to resolution of inflammatory or malignant deposits pressing on nerves rather than to a direct action of the rays on nerve cells which are very radioresistant.

In pruritus, associated with inflammatory eruptions, relief of itching follows subsidence of the eruption.

In pruritus without visible skin changes except those due to scratching, it is difficult to explain relief of itching from irradiation unless we can assume that inflammatory changes are present in sensory nerve terminals. (Desjardins.)[2]

(F) *Affections of Appendages of Skin.* (a) Sweat glands: The epithelial lining is radiosensitive so that secretion may be diminished as in regional hyperidrosis.

(b) Sebaceous glands: The epithelial lining is radiosensitive so that secretion may be decreased as in acne and seborrhoea.

(c) Hair and hair follicles: The epithelium of the hair follicles is radiosensitive so that diseased hairs may be exfoliated as in tinea tonsurans.

2. TECHNIC

One of the first principles in the use of radium is to avoid injury either through irradiation or manipulation.

A technic should be used that is surgically and radiologically correct, entails a minimum of pain and inconvenience to the patient and is at the same time efficient.

There are two chief ways of using radium: 1. surface irradiation and 2. radium "puncture."

1. *Surface Irradiation.* We cannot too strongly insist upon the fact that surface irradiation is the method of choice.

Surface irradiation may be used alone or in conjunction with other treatment. The application to the skin of irritating medicaments should be avoided, however, during irradiation.

We use radium and radon interchangeably as one milligram of metallic radium is equivalent in radiating power to one millicurie of radon.

A tumor or lesion that is radiosensitive may disappear under radium treatment without visible inflammatory reaction—the so-called "selective action" of the rays.

Some cases of angioma may be clinically cured in this way.

With tumors or lesions that are somewhat radioresistant such as squamous celled epithelioma of the lip one must usually invoke the inflammatory action of radium.

Four degrees of inflammatory reaction may be distinguished although these degrees or stages of reaction pass insensibly into each other.

These stages are (a) simple erythema, (b) erythema followed by desquamation, (c) vesication or superficial ulceration, (d) deep ulceration.

The selective effect of radium should be used whenever possible in order to conserve normal tissues and spare patients unnecessary discomfort.

2. *Radium "Puncture."* In the radium treatment of tumors, the best results are obtained by delivering a uniform dose to all the tumor cells. A homogeneous effect is best achieved by applying the radium to the surface.

The implantation of radium (or radon) needles or "seeds" of any type in the skin is traumatic and gives rise to a good deal of pain and destruction of tissue. Severe radium necrosis may be easily produced.

Cosmetic results are poor compared with those obtained by surface "irradiation."

Long experience has convinced us that radium "puncture" is absolutely contraindicated in affections of the skin except under the very rarest circumstances.[3] In our practice radium "puncture" is practically limited to cancer of the tongue in which we use lead radon tubules.[4]

3. DOSAGE

(a) *Gamma Rays.* The "threshold pigmentation dose" is defined as a faint bronzing of the skin usually without reddening; the "threshold erythema" dose a faint reddening of the skin; the full "erythema dose" a sharp reddening of the skin, these effects appearing in 80% of individuals 10 days or more after exposure.[5]

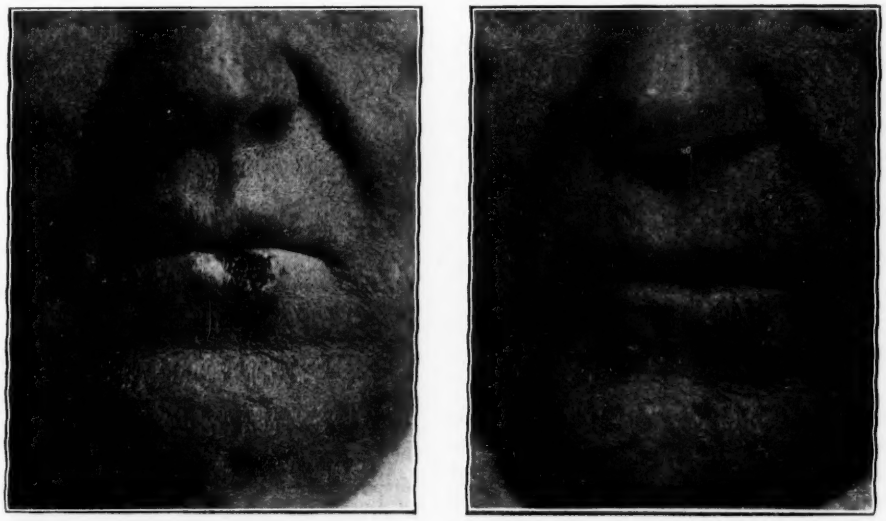

Fig. 1. (Left) Epithelioma of lower lip. Photo Dec. 22, 1934. (Right) Patient in Fig. 1 after surface application of radon. Clinically well over 4 years.

The threshold erythema skin dose is about 15% greater than the threshold pigmentation dose; the full erythema skin dose about 2.6 times the threshold erythema skin dose, depending somewhat on the screening.[6]

The exact meaning of "erythema skin dose" (E.S.D.) thus varies among different radium therapists and roentgenologists.

There is no such thing as a "carcinoma dose" because carcinomas have different degrees of radiosensitivity.

One may use the term "toleration dose" (Von Groedel) which means the dose that the normal tissue will support without seriously impairing its integrity.

Neglecting for the moment the radiosensitivity of the tissues, the effect of radium applied to the skin depends on:

1. The quantity of radium.
2. Filtration.
3. Size and shape of the source.
4. Distance of the source from the surface.
5. Absorption in the apparatus.
6. Absorption in the tissues.
7. Secondary radiations in the tissues.
8. Duration of the exposure.
9. Fractionation of the dose.

1.* QUANTITY

The quantity used naturally depends on the lesion and whether mild and superficial or intensive and deep effects are required.

With the larger quantities of radon, a movable lead shield is placed around the radon applicator in order to protect both patient and operator.

In the treatment of malignant tumors both small amounts of radium such as 50 mg. or mc. applied for long periods and large amounts such as 1000 mg. or mc. applied for short periods of time have been advocated.

Wickham and Degrais[7] believed squamous celled carcinoma of the mucous membrane is best irradiated by a large quantity for a short period of time. By this method there is much less rubbing and maceration of the mucous membrane and hence less danger of causing metastatasis than under the reverse conditions.

Lazarus-Barlow and Dunbar[8] have shown experimentally in animals that a large quantity of radium acting for a short time is more destructive to normal squamous epithelial cells than a smaller quantity acting for a corresponding longer time. This principle may be applied with a certain degree of justification to the destruction of squamous celled epithelioma of the skin.

We usually treat squamous celled cancer by applying a large quantity of radium for a short period of time usually on successive or alternate days so that the desired dose is delivered in a few weeks.

2. FILTRATION

Filtration reduces the amount and changes the quality of rays reaching the tissues. The alpha rays are absorbed by the glass wall of the radon tube. Beta rays are heterogeneous and have different penetrating powers. 93.8% of the hardest or most penetrating beta rays are absorbed by 1 cm. of epithelial tissue.

By interposing between the radium and the skin various metallic and non-metallic screens (filters) the less penetrating rays may be arrested by filtration. In the case of a tumor in the skin or below its surface, we may thus absorb the rays of longer wave length, only the more penetrating rays of shorter wave length (gamma rays) reaching the tissues.

The screens for superficial irradiation may consist of lead or silver 0.1 mm. to 0.5 mm. thick; for deep irradiation, lead or silver 2 mm. thick.

Lead or silver screens 0.1 mm. thick absorb 50%; 0.3 mm. thick, 87.5%; 0.5 mm. thick, 96.8%; 2 mm. thick, more than 99.9% of the hard beta rays.

Brass screens 2.5 mm. thick are equivalent to lead or silver screens 2 mm. thick. Some use for deep effects a platinum screen 2 mm. thick which absorbs all of the beta and some of the softer gamma rays.

Non-metallic substances such as rubber or balsa wood, 0.5 to 6 or more cm. thick are usually placed between the metallic screen containing the radium and the skin. These serve the double purpose of maintaining the proper distance and absorbing the secondary rays of Sagnac which may be irritating or even caustic. Tables of densities of different materials may be found elsewhere.[1]

3 & 4. SIZE AND SHAPE OF THE SOURCE AND DISTANCE OF THE SOURCE FROM THE SURFACE

Radium may be distributed on an applicator of almost any size or shape. Practically we limit ourselves to:

(a) A line several mm. long, i.e. a single tube.

(b) Several lines, i.e. several tubes.

(c) A plane surface—tubes or plaques laid side by side.

(a) *Single Tubes.* Considering each tube as a point source the intensity of the gamma rays at a given point varies inversely as the square of the distance from the source to the surface (inverse square law).

If a radium tube 14 mm. long screened with 1 mm. of gold and 1 mm. of rubber is applied in contact with the skin the full erythema skin

dose (E.S.D.) is 118 mg. hrs.[9] Here the radium tube is 2 mm. distant from the skin.

At 10 mm. distance the full E.S.D. is 235 mg. hrs.[9] Here the radium tube is 12 mm. distant from the skin.

With the radium tube 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 mm. distant from the skin, E.S.D. may be calculated as approximately 130, 141, 154, 165, 177, 189, 200, 212, 228 and 235 mg. hrs. respectively.

With the radium tube 5 mm. distant from the skin the equation is: $E.S.D. = 118 + \frac{3\,(235-118)}{10} = 154$ mg. hrs. Similar calculations may be made for other distances. We seldom treat malignant tumors at distances smaller than 7 mm. (2 mm. brass, silver or lead + 5 mm. balsa wood).

(b) *Several Tubes.* We have shown elsewhere [10] that at distances of approximately 3 to 9 mm. from the skin an approximately uniform radiation field is obtained at the skin by placing 2 equal point sources or tubes approximately twice as far apart as their distances from the skin; three equal point sources or tubes at the corners of an equilateral triangle; four equal point sources or tubes at the corners of a square.

The sides of the triangle and of the square should be twice as long as the distances of the sources from the skin.

(c) *A Plane Surface Formed by Tubes or Plaques Laid Side by Side.* As the number of tubes is increased, e.g. to 5 or more, the effect at the skin approaches closely to that produced by a plaque or plane surface.

We have shown by mathematical calculations[10] that at a distance of 6 or more cm. a point source and a radio active circular plate 4 cm. in diameter have an almost identical effect at the skin surface. At a distance of 10 cm. or more a point source and a radio active circular plate 10 cm. in diameter have an almost identical effect at the skin surface. For practical purposes it may be stated that large extended sources (15 or more tubes laid side by side) at distances of 6 or more cm. from the skin have an almost identical effect to that produced by a point source.

Experiments have been made by Failla and Quimby,[11] Widmann[12] and others to determine an "erythema skin dose." Failla and Quimby applied radium applicators of various sizes and shapes with screens of different thicknesses at various distances from the skin.

TABLE 1 (FAILLA AND QUIMBY)[11]

Threshhold E.S.D. in Miligram Hours for Applicators With Filters of 2 MM. of brass and 2 MM. of rubber placed at various distances from the skin.

Dist.	Squares			Length of Sides		
in cm.	1 cm.	2 cm.	4 cm.	6 cm.	8 cm.	10 cm.
0.5	...	...	...	...	...	...
1.0	190	252	439	686	1,000	1,385
1.5	386	456	686	986	1,600	1,785
2.0	670	762	1,010	1,350	1,760	2,250
3.0	1,485	1,530	1,870	2,250	2,720	2,350
4.0	2,620	2,670	3,070	3,600	4,000	4,650
5.0	4,000	4,240	4,500	4,970	5,540	6,260
6.0	...	6,000	6,260	6,860	7,580	8,000
7.5	...	9,000	9,000	10,300	11,000	12,000
10.0	...	16,000	16,000	18,000	18,000	18,000

5. ABSORPTION IN THE APPARATUS

If a block of balsa wood of varying thickness (0.5 to 10 cm.) is placed between the radium and the skin, a certain amount of absorption of rays will take place in the balsa wood. Absorption is so small, however, that for practical purposes it may be neglected, at least for small distances such as 1 or 2 cm.

6. ABSORPTION IN THE TISSUES

Let us consider the effect of absorption in the tissues in decreasing the intensity of the irradiations below the skin surface. We may compare 1. the superficial dose, i.e. the intensity at a given point on the surface and 2. the deep dose, i.e. the intensity on the axis of the applicator at different depths in the tissues. Assume an absorption coefficient of .01 in the balsa wood; .05 in the tissues. We have shown by mathematical calculations[10] that with the radium 6 cm. distant from the skin, the ratio between the superficial and deep dose at a point 10 cm. below the surface on the axis of the applicator is about 1 to 10; with the radium at 10 cm. from the skin, 1 to 6. From the standpoint of equalizing the deep dose and the superficial dose, this comparison shows the advantage of placing the radium at a considerable distance from the surface.

From a practical point of view, the more superficial the lesion, the closer to the skin the radium should be placed; the deeper the lesion, the farther away from the skin.

For superficial effects, the distance of the radium from the surface may be 0.5 to 1 cm.; for the deeper effects 1 to 6 cm.; for the deepest effects, 6 to 10 cm.

As the distance of the source from the surface increases, the quantity of radium must be increased, a longer time of exposure given or both factors increased.

7. SECONDARY RADIATIONS IN THE TISSUES

It has been shown that in all mathematical calculations of the deep intensity the secondary radiations from the impingement of the primary gamma radiations upon the tissues must be taken into account.

Our own experiments[13] lead us to believe that the secondary radiations in tissues may augment the effect of the primary gamma rays to such an extent that the decrease due to absorption is neutralized.

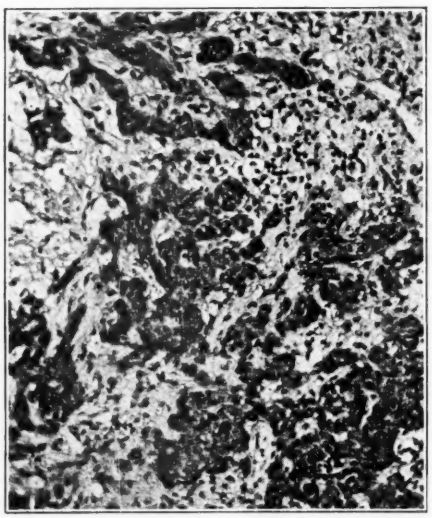

Fig. 2. (Left) Epithelioma of lip and cheek in woman aged 45. Note scars of previous operations. Under surface application of radon patient recovered and was clinically well 4½ years later. Recently a plastic operation was done by the referring surgeon to improve contour of mouth. Photo Oct. 7, 1934. (Right) Photomicrograph of section of lesion. x 120.

8. DURATION OF THE EXPOSURE

Milligram Hours. The terms "milligram" and "millicurie" hours are used to designate a number obtained by multiplying the number of milligrams of radium element or millicuries of radon by the number of hours of exposure.

We may neglect for the moment the decay of the radon. Thus 10 mg. or 10 mc. used for 10 hours may be expressed as 100 mg. or mc. hours (10x10).

These terms are without great meaning, however, unless the screening, the shape of the source, and especially the distance of the source from the surface are known.

Is the biologic effect the same if one employs a large intensity for a short time or a smaller intensity for a longer time?

According to Kroenig and Friedrich's[14] experiments with x-rays, if the ratio of intensities is equal to or less than 1 to 5, the biologic effect is independent of the intensity.

Thus with gamma rays the effect of 100 mg. for 5 hours is practically the same as the effect of 500 mg. for 1 hour. For ratios greater than 1 to 5, the biologic effect is greater for the greater intensity. Thus the effect of 500 mg. for 1 hour is greater than the effect of 50 mg. for 10 hours.

Millicurie Hours. Radon loses approximately 16% of its activity each 24 hours.

Special standard tables showing the progressive decrease in strength of radon facilitate calculations of dosage.[15]

Millicuries Destroyed. In Europe instead of using the expressions milligram or millicurie hours the dose is frequently expressed in "millicuries destroyed."

A dose expressed in "millicuries destroyed" is changed into mg. hrs. or mc. hrs. by multiplying the number of "millicuries destroyed" by 133.

Thus a radiation dose of 1 mc. destroyed equals approximately 133 mg. or mc. hrs.; 2 mc. destroyed, 266 mg. or mc. hours, etc.

9. FRACTIONATION OF THE DOSE

The radiation dose may be delivered in one seance or a series of seances.

From a physical standpoint it makes little difference which method is used as the same amount of energy may be delivered by either.

1. A single short dose of high intensity, 2. a single protracted dose of low intensity or 3. a series of fractional doses may be given.

From a biologic standpoint, however, different effects are produced, depending on whether the dose is delivered in one seance or a series of seances.

In grafted tumors of the lower animals, irradiations divided into a series of doses extending over days or weeks produce more destruction of neoplastic cells and less destruction of normal cells than the same dose administered in one seance. Injury to normal cells which reproduce slowly may thus be reduced while injury to cancer cells which reproduce rapidly may be increased.

By giving fractional doses over a period of 2 to 6 weeks it has been found that the skin will tolerate a dose several times greater than could safely be given in one seance.

This does not mean, however, that small fractions of the lethal tumor dose may be given over periods of months or years.

X-RAYS

The following table shows the effect of a single dose and equal daily fractional doses given with 200 KV X-Rays.

TABLE 2 (A. REISNER) [16]

Various doses which produce the same effect in human skin.

No. of irradiations	No. of R per irradiation	Total R	Per cent. dose
1	1000	1000	100
2	650	1300	130
3	500	1500	150
4	400	1600	160
7	300	2100	210
12	200	2400	240
27	100	2700	270

It appears to make comparatively little difference into how many equal fractions the dose is divided provided the total time (days or weeks) over which treatments extend is the same.

Thus, if a series of 4 treatments is given at 3 day intervals over a period of 12 days nearly the same effect on the skin is produced as when a series of 12 treatments is given on consecutive days provided the total dose in roentgens is the same.[17]

RADIUM

Our experiments with radium indicate that effects similar to those in Table 2 will be produced when gamma rays are used.

It has been found that fractional doses may produce nearly the same effect on the skin as a continuous dose of the same total amount provided the total time over which treatments extend is the same.

Thus 2 doses each of 150 mg. hours, separated by a 24 hour interval, produce approximately the same reaction in the skin as 300 mg. hours given continuously over 24 hours; 3 doses each of 115 mc. hours, separated by 48 hour intervals, produce approximately the same reaction as a continuous irradiation with 345 mc. over a period of 96 hours.[18]

(b) *Beta Rays.* Beta rays may be conveniently utilized by employing radium plaques which may contain 1.25 mg., 2.5 or 5 mg. of metallic radium per square centimeter of radiating surface. These plaques are respectively designated as one-fourth, one-half and full strength plaques or applicators. Beta rays are of value in many superficial skin disorders.

We seldom use unscreened radium plaques on account of the undesirability of causing inflammatory reaction and the limited power of penetration of the beta rays.

Screened with 0.1 mm. of lead which absorbs 50% of the hard beta rays, radium plaques may be applied 1. in contact with the skin or 2. at an exact distance by interposing non-metallic substances such as rubber or balsa wood blocks 0.5 to 1 or more cm. thick between the screened face of the plaque and the skin.

Although with this technic both beta and gamma rays take effect, the quantity of beta rays greatly exceeds that of gamma rays while their absorption takes place in the first centimeter of tissue.

The action of the beta rays thus preponderates over that of the gamma rays. Dosage with plaques is indicated under treatment of the various diseases of the skin.

4. TREATMENT

Some authors state there is no essential difference between the effects of gamma rays and x-rays. We have found the effects to be similar but not absolutely identical as illustrated by the superior effects of gamma rays in angiomas.

Beta rays, emitted by unscreened or slightly screened radium, are very useful in a large number of dermatoses although in practice they are always mixed with gamma rays.

Beta rays are not emitted by the x-ray tube. This subject is discussed more fully elsewhere by the writer.[1]

To obtain the best results, it is perhaps needless to point out that practical knowledge of dermatology and of radiation effects is necessary.

Owing to the limits of our space, only the methods of irradiating the more common skin affections will be discussed.

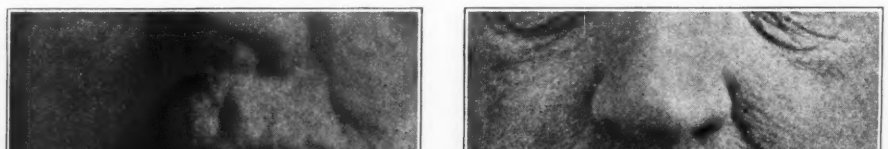

Fig. 3. Left) Squamous celled epithelioma recurring after operation on lip and left sub-maxillary nodes of neck. Photo Sept. 18, 1936. (Right) Patient in Fig. 3 after surface application of radon. Photo Feb. 13, 1937. Six months later recurrence in nodes of left submaxillary region. Prognosis is poor.

(A). MALIGNANT TUMORS

1. *Carcinoma.* Cancer of the skin may be (a) primary—arising *de novo* from the epidermis (or its glandular structures) or by transformation of a benign lesion such as keratosis senilis; (b) secondary—by extension from adjacent structures or by metastasis from distant organs.

The treatment of Paget's disease, arising by extension from carcinoma of the breast, will be described in a later paragraph.

The treatment of metastases in the skin from distant organs is similar to that advised for primary cancer.

Primary cancer. On clinical and histologic grounds one may distinguish 3 types—1. Basal celled epithelioma (rodent ulcer). 2. Adenocarcinoma. 3. Squamous celled Epithelioma.

1. *Rodent Ulcer.* Clinical features.

Rodent ulcer is situated usually on the upper 2/3 of the face.

The earliest lesion is microscopic. Clinically it begins *de novo* as a papule, one or more mm. in diameter, round, flat, with depressed center and unbroken skin surface, pearly gray or brownish red in color and firm to the touch.

It may remain for years without much change but sooner or later it breaks down, forming a discharging ulcer with depressed center and raised "built up" border.

It advances by progressive erosion and ulceration of successive layers of tissue.

Cartilage and bone may be destroyed. Rarely it may metastasize but only after having changed to the squamous celled type of epithelioma.

Some deny that such a transformation ever takes place.

Gumma may simulate. When doubt exists, biopsy is indicated.

Pathology. Solid columns of epithelial cells grow downward into the dermis but there is no differentiation of cells and hence, as a rule, there are no "cell nests."

2. *Adenocarcinoma.* (Adenoid cystic epithelioma.) Clinical features.

It appears usually on the face, especially on the nose, eyelids and forehead as one or more raised pearly nodules which may ulcerate. The course is chronic. It is comparatively benign.

Pathology. It is derived from the epithelium of the sweat or sebaceous glands. Microscopically, cysts appear surrounded by basal celled epithelioma. Boyd considers this type "an uncommon form of squamous cell carcinoma."

3. *Squamous Celled Epithelioma.* Clinical features.

It tends to occur at the muco-cutaneous junctions—nose, mouth, anus, vulva, etc., but also elsewhere on skin.

The earliest lesion is microscopic. It may begin *de novo* or in a precancerous lesion.

Beginning *de novo,* it appears as a papule, one or more mm. in diameter, pearly gray or brownish red in color and firm to the touch. Sooner or later ulceration occurs.

Beginning in a senile keratosis or other "precancerous lesion" malignant change may be announced by peripheral extension, thickening, scaling, cracking, crusting or bleeding. After weeks or months ulceration occurs.

One then sees a centrally depressed lesion, one or more cm. in diameter often with a polycyclic edge and raised hard border. The ulcer discharges serum, pus or blood, which may form crusts.

As in other situations, such as the lip or cervix uteri, an everting fungating or inverting, infiltrating lesion may develop. Growing rapidly or slowly, it infiltrates and destroys the deeper tissues, even cartilage and bone. It metastasizes to adjacent lymph nodes, often early and by lymphatic embolism. More rarely it may spread to distant organs by the blood stream. Gumma may simulate. When doubt exists, biopsy is indicated.

Pathology. Epithelial cells break through the basement membrane and invade the corium and deeper tissues. Well marked "cell nests" occur.

Treatment. Surgery. In basal celled epithelioma excision is seldom indicated. In adenoid cystic epithelioma, which is somewhat radioresistant, excision may be performed if irradiation fails. In squamous celled epithelioma, excision is indicated in selected cases, such as large, deeply infiltrated lesions on back of hand, vulva, etc.

Radium. Radium is the method of choice in most epitheliomas of the skin. Surface irradiation is always used. Radium "puncture" is contraindicated. Formerly it was believed that basal celled epithelioma was radiosensitive and squamous celled epithelioma somewhat radioresistant. Lacassagne[19] states that this view is incorrect, both types being responsive to radium. It is, however, more difficult to obtain a clinical cure with squamous celled epithelioma due to the greater depth of the tumor infiltration.

In diabetics, syphilitics and in patients with epithelioma previously subjected to protracted but inadequate irradiation with x-rays the response to radium treatment may be poor.

One has a choice of 3 methods in the surface irradiation of carcinoma of the skin: 1. the single short dose of high intensity, 2. the single protracted dose of low intensity, 3. the fractionated dose.

1. *The Single Short Dose of High Intensity.* This method should seldom, if ever, be used because of possible injury to normal structures.

2. *The Single Protracted Dose of Low Intensity.* Continuous irradiation, while feasible in some cases of basal celled cancer, is contraindicated in metastasizing squamous celled cancer of the skin, lip, and oral mucous membranes because of the rubbing and maceration of the tissues with the radium applicator and the consequent danger of causing metastasis.

3. *Fractionated Doses.* If a threshold erythema skin dose is produced with gamma rays in a single seance, approximately the same effect may be obtained by augmenting this dose 30% if given in 2 equal daily seances; 50% if given in 3 equal daily seances and so on (Table 2).

After theoretically augmenting the dose by fractionating it, one may give approximately 2 to 4 times this augmented dose.

Data derived from theoretical calculations must always be used with caution until sufficient experience has been accumulated.

Assume an applicator measuring 2x2 cm. containing 500 mc. screened with 2 mm. of brass is placed 1 cm. from the skin. The threshold E.S.D. = 252 mc. hrs. (Table 1).

If 12 equal consecutive daily irradiations are given, the above dose may be augmented by

240%, i.e. to 604 mc. hrs. (Table 2).

Approximately 3 threshold E.S.D. (1812 mc. hrs.) may be given.

Assume an applicator measuring 4x4 cm. and containing 500 mc. screened with 2 mm. of brass is placed 2 cm. from the skin. The threshold E.S.D. = 1010 ms. hrs. (Table 1).

If 12 equal consecutive daily irradiations are given the dose may be augmented by 240%, i.e. to 2424 mc. hrs. (Table 2). Approximately 2 to 3 E.S.D. (4848 to 7272 mc. hrs.) may be given.

TREATMENT OF EPITHELIOMA IN SPECIAL LOCATIONS

1. *Epithelioma of the Upper Eyelid.* Surgery. Usually contraindicated.

Radium. The eyes should be examined prior to treatment to guard against future claims that they have been injured by irradiation.

During radium treatment of lesions of the upper eyelid, attempts have been made to protect the eyeball by anesthetizing the conjunctiva and inserting under the closed upper lid a smooth gold screen. As ulcer of the cornea may follow this procedure, we regard it as contraindicated.

300 mc. screened with 2 mm. of brass in an applicator measuring 2x2 cm. may be applied at 1 cm. distance over the closed eyelid.

A total of approximately 1500 mc. hrs. may be cautiously given in 12 equal daily seances.

We do not favor irradiating the tumor from the inner (mucous membrane) surface of the upper eyelid.

Radium "puncture" is contraindicated.

2. *Epithelioma of Lower Eyelid.* Surgery. Usually contraindicated on account of scarring and possible ectropion.

Radium. For relative protection of the eyeball a gold screen made after the model of an artificial eye is placed over the closed upper eyelid.

The lower eyelid is gently pulled down and away from the eyeball and secured with adhesive tape.

500 mc. screened with 2 mm. of brass in an applicator measuring 2x2 cm. may be applied at 1 cm. distance.

A total of approximately 1500 mc. hrs. may be cautiously given in 12 equal daily seances.

Radium "puncture" is contraindicated.

3. *Epithelioma of Upper Lip.*[20] Surgery is seldom indicated.

The lesion is often basal celled and radiosensitive.

Radium is the method of choice. The technic is similar to that used for the lower lip.

Radium "puncture" is contraindicated.

4. *Epithelioma of Lower Lip.*[20] Surgery. The results are good, approximately 70% of cases remaining well for a 5 year period of time. There is, of course, some sacrifice of tissue. Ewing says: "Although surgical results with labial cancer are excellent radium accomplishes as much, or more, without mutilation."

Radium. Two aspects—external and internal—and sometimes 3 aspects of the lip—external, mesial and internal—may be irradiated.

Much depends on the conformation of the lesion and the flexibility of the lip which is decreased by the infiltration of the tumor.

Small Superficial Lesions.

Factors:

Quantity = 250 to 500 mc. Screen = 2 mm. of brass.

Size of applicator = 2x2 cm. Distance = 0.5 cm.

One threshold E.S.D. = approximately 126 mc. hrs.

If number of seances = 7, add 110% = approximately 265 mc. hrs., which may be given to each of 3 aspects of lip lesion.

Large Deep Lesions.

Factors:

Quantity = 500 mc. Screen = 2 mm. of brass.

Size of applicator = 4x4 cm. Distance = 1 cm.

One threshold E.S.D. = approximately 439 mc. hrs.

If number of seances = 7, add 110% = approximately 922 mc. hrs., which may be given to each of 3 aspects of lip lesion.

It is important to irradiate several cm. beyond the tumor edge but care must be taken that the irradiations do not overlap.

No stereotyped method of using radium can be devised, however, to cover all contingencies.

Radium "puncture" is contraindicated in epithelioma of the lip.

METASTASES

Treatment. In carcinomatous involvement of

the lymph nodes, excision is the method of choice.

If the nodes are fixed and inoperable, surface irradiation may be used.

Radium "puncture" of carcinomatous lymph nodes is contraindicated.[20]

2. MELANOMA

Melanomas are tumors arising from pigmented cells (melanoblasts) which are found chiefly in the skin and choroid coat of the eye. Melanomas may be brown, gray blue, bluish black or black in color. The pigment is melanin and elaborated by the cells themselves. Melanomas may be (a) benign or (b) malignant.

(a) *Benign Melanoma.* This term includes 1. moles (pigmented nevi), which are congential, and 2. circumscribed pigmented spots (lentigo). The latter are to be distinguished from lentigo (freckles) in children.

The importance of a pigmented nevus or lentigo lies in the possibility of its becoming malignant. The "nevus blau" of Fieche is of bluish color, arises in the dermis and is essentially benign.

(b) *Malignant Melanoma.* This term includes 1. malignant lentigo (Hutchinson).

A smooth pigmented spot a few mm. in diameter and black in color appears in the skin or mucous membrane, e.g. on the foot or lower lip. At first apparently benign it may become malignant.

2. Malignant whitlow (Hutchinson).

One or more blackish pigmented spots or nodules appear in the nail bed under the nail or in the paronychial tissue.

The thumb and great toe are favorite sites. At first apparently benign the pigmented spot or nodule may become malignant. Malignant lentigo and whitlow are probably derived from melanoblasts in the deeper epidermal layers.

3. Malignant pigmented mole. A benign mole may become malignant. Malignancy in a mole may be heralded by increased pigmentation, growth, cracking, crusting, bleeding or the development of "satellite" tumors in the adjacent skin. Malignant moles were formerly regarded by Unna[21] and others as melanocarcinomas derived from epithelial cells.

Masson[22] believes a benign mole is a neuronevus and that a malignant mole is derived from neuroectodermal rather than from epithelial cells.

Any of the foregoing malignant melanomas may ulcerate and discharge an inky black fluid. Metastases, which may be blacker than the primary tumor, may appear in the skin, lymph nodes or viscera. Odel, Montgomery and Horton[23] reported a remarkable case of diffuse melanosis secondary to malignant melanoma in which the patient's skin was so black that he had been mistaken for a negro.

4. Secondary melanoma of the skin.

The choroid coat of the eye is usually the primary seat. Secondary deposits may appear in the skin and viscera, especially the liver, which may contain hundreds of small tumors 1 or more cm. in diameter.

"Beware the man with the glass eye and enlarged liver."

The microscopic picture of these tumors is that of a melanosarcoma.

5. Idiopathic multiple pigment sarcoma. (Kaposi.)

This is found chiefly in Southern Europe, most cases in North America having been imported. The primary seat is the skin and subcutaneous tissue.

It is characterized by the appearance, chiefly on the feet and legs but also in other part of the skin, including the mucous membranes, of numerous nodules and plaques of brown, red or purplish color which may ulcerate.

It metastasizes by the blood stream to the viscera. Described by Kaposi as a pigmented sarcoma, some believe this disease is a granuloma.

Treatment of Melanoma. (a) Benign Melanoma. Theoretically all pigmented moles should be removed by excision. As this is seldom practicable, surgery may be limited to operable moles situated in places subjected to traumatism.

(b) Malignant Melanoma. A black pigmented spot developing in an adult without apparent cause should be regarded as possible *"malignant lentigo"* and excised at once. In *"malignant whitlow"* amputation of the distal joint and excision of the adjacent lymph nodes are usually indicated.

Pigmented moles that have undergone any change in physical character should be regarded as probably malignant and excised at once. Biopsy is contraindicated.

With multiple tumors excision may be impractical and irradiation may be used.

As a rule malignant melanomas are very radioresistant. Exceptions occur as in cases reported by MacKee[23] and others.

The technic of irradiation is the same as for epithelioma.

Melanoma of the eye should be treated by enucleation of the eyeball.

Kaposi's sarcoma may recover spontaneously. Surface irradiation may be used with good results. Recurrence is common, most cases terminating fatally in from 2 to 4 years.

Fig. 4. (Left) Angioma of deep bluish red color in baby girl 11 months old. Photo Oct. 20, 1931. (Right) Patient in Fig. 4 after surface application of radium. Angioma resolved without inflammatory reaction. Photo Oct. 25, 1935.

3. XERODERMA PIGMENTOSUM

A familial disease, essentially malignant, beginning in infancy and due probably to sensitivity to sunlight.

It is characterized by the development usually on exposed areas—face and hands—of freckles, atrophic spots, telangiectasia, keratoses and epitheliomas.

Treatment. The keratoses and epitheliomas may be healed by surface treatment with radium. The disease as a rule progresses to a fatal termination in the course of some years.

4. PAGET'S DISEASE OF THE NIPPLE

This disease, essentially malignant, is situated on the nipple and areola. It may extend to the adjacent skin. It appears as an "eczematous" looking, sharply circumscribed, moist and weeping or dry and scaly bright red patch.

It is generally regarded as a dermatosis secondary to mammary duct carcinoma rather than of dermal origin.

Treatment. Pre- and post-operative surface irradiation with radical amputation of the breast is indicated.

Radium "puncture" of the breast is contraindicated.

5. SARCOMA

Sarcoma is 1/10 as common as carcinoma.

In the skin and subcutaneous tissue sarcoma, like cutaneous cancer, may be 1. primary, arising *de novo* or from transformation of a benign lesion or tumor such as neuro-fibroma, 2. secondary to sarcoma elsewhere as from the choroid coat of the eye via the blood stream.

Sarcoma of the skin and subcutaneous tissue may be (a) non-pigmented, (b) pigmented. (See Melanoma.)

Non-pigmented sarcoma may be 1. localized or 2. generalized.

1. *Localized.* One or more "fleshy lumps" occur, most often on the extremities, varying from several millimeters to many centimeters in diameter. If non-ulcerating, color of overlying skin may be normal, dusky or pinkish.

Dilated blood vessels may be seen in the overlying skin.

If ulceration occurs, a fungating "fleshy" tumor may result which is less firm than carcinoma and may be soft from extreme vascularity, intratumoral hemmorhage or mucoid degeneration.

The tumor may be movable or fixed to skin or deeper tissues.

2. *Generalized.* Several hundred tumors may occur, the affection as a whole bearing a close resemblance to mycosis fungoides, Hodgkin's disease, leukemia cutis or even leprosy.

In extensive sarcomas, fever may be present from cell degeneration and absorption of toxic products.

Pathology. As connective tissue is found in all parts of the body, sarcoma may occur in practically any structure—skin, subcutaneous tissue, fascia, muscle, tendon sheaths, cartilage or bone.

Round celled (small and large) spindle celled (small and large) giant celled and mixed celled sarcomas are described. Some pathologists object to a classification based on cell form.

Small round celled sarcomas are the most malignant i.e. the most likely to recur after excision (due to incomplete removal) and to metastasize.

Spindle celled sarcomas (fibro sarcomas) are the least malignant.

Giant and mixed celled sarcomas are intermediate in malignancy. In sarcoma, metastasis occurs especially by the blood but also by the lymph stream.

SPECIAL FORMS OF NON-PIGMENTED SARCOMA

1. Neurogenic sarcoma. A subcutaneous tumor arising primarily or from a neurofibroma. Usually a single nodule is found on one of the extremities in the subcutaneous or intermuscular tissues.

Arising from cells of a nerve sheath, it is composed of spindle and polygonal cells lying in a loose stroma. Usually it recurs after excision. It metastasizes early, often to the lungs.

2. Dermatofibrosarcoma. A rare primary tumor of skin. Appears on trunk or limbs as infiltrated plaques, 10 or more centimeters in diameter, from which project nodules. It recurs after excision but seldom metastasizes.

3. Synovioma. A rare primary subcutaneous tumor. It is most often found on the hands and feet. It appears as a swelling over a tendon and gradually enlarges but seldom exceeds 6 or 8 cm. in diameter. It arises in cells of a synovial sheath. It seldom recurs after excision and never metastasizes.

4. Lymphosarcoma. It begins most often in the lymph nodes of one side of the neck which become slowly enlarged. At first discrete the nodes become conglomerate sometimes forming a large irregular mass 12 or more cm. in diameter.

The skin is involved secondarily. Ulceration may occur in neglected cases.

This disease appears to take its origin from lymphoid and reticuloendothelial cells of the lymph nodes.

Some believe a primary focus often undiscovered always exists in the tonsil, nose or pharynx. Lymphosarcoma usually recurs after excision and metastasizes early.

5. Myxosarcoma. A term applied to a sarcoma in which the cells (and stroma) have undergone mucoid degeneration.

The tumor is boggy on palpation and may "quiver like jelly."

Treatment of Sarcoma. Surgery. If operable, all forms of sarcoma except lymphosarcoma should be treated by excision.

Radium. Pre- and post-operative irradiation is indicated.

Radium technic is the same as for carcinoma of skin.

In some cases, it may be advisable to use intensive irradiation to test the radiosensitivity of the tumor. If complete recession occurs, no further treatment may be necessary.

If the tumor persists, wide excision is indicated. Coley's serum should be used as an adjunct.

These combined methods have produced a good many isolated cures.

Inoperable tumors may be irradiated as in carcinoma.

In isolated cases, excellent results have been obtained.

Lymphosarcoma is one of the most radiosensitive of all tumors.

Irradiation is the method of choice, surgery being contraindicated.

Large masses may melt away but recurrence in other regions is common.

Permanent cures have been reported.

6. Mycosis fungoides, Hodgkin's disease and

leukemia of the skin may be considered for convenience under malignant neoplasms.

Treatment. Surface irradiation with 1000 or more mc. screened with 2 mm. of brass at distances of 4 to 6 cm. may be used.

Palliation for months or years or even a temporary clinical cure may be obtained. Radium "puncture" is contraindicated.

The final prognosis is grave.

(B) BENIGN TUMORS

1. *Nevus Pigmentosus (Mole).* Clinical features. Moles are congenital tumors (benign melanomas) of the skin. They may be single or multiple. Occurring most often on the face they may be found anywhere on the body. The diameter varies from 1 mm. to 10 or more centimeters. In rare cases they form large bulky tumors. They may be pigmented or non-pigmented. Frequently they contain hairs. The surface may be smooth or verrucous. They may increase in size especially at puberty. In the elderly and sometimes in the young, a mole that begins to grow or change in physical character should be regarded as malignant.

Treatment of Moles. Surgery. Wide surgical excision is indicated. Cauterization should not be used.

Radium. Radium has no selective action on pigmented nevi.

2. *Linear Nevus.* A congenital benign neoplasm occurring on the face, trunk or limbs, as variously sized, warty streaks or patches.

Treatment of Linear Nevus. Surgery. Small areas may be excised. Very extensive lesions are scarcely amenable to any type of treatment.

Radium. Lesions not over several centimeters in extent may be greatly improved by radium. Beta ray technic is indicated, the total exposure depending on the thickness and elevation of the lesion. Usually a subepithelioma dose is sufficient. Radium "puncture" is contraindicated.

3. *Keloid.* Clinical features. Keloids vary in diameter from several mm. to 10 or more centimeters sometimes forming large tumors. Beginning as a small, pinkish nodule which grows gradually, a keloid usually appears as an irregularly shaped, elevated, smooth, pinkish, cicatriform lesion with characteristic claw-like projections from the periphery.

Pathology. A fibrocellular new growth of the corium. Some do not regard keloid as a true neoplasm.

Treatment of Keloid. Surgery. With small, slightly elevated keloids surgery is not indicated. With large, elevated bulky tumors, surgery may be necessary but should be followed by radium treatment to prevent recurrence.

Radium. With small keloids ¼ strength radium plaques screened with 0.1 mm. of lead may be used. If in contact, a total exposure of 2 to 4 hours in seances of ½ hour each, daily or every other day, may be given. At 2 mm. distance, the total exposure may be doubled. In keloids of recent formation and in children ½ or ¼ the above dose should be used.

With more elevated and resistant keloids gamma ray technic may be employed.

Fifty per cent threshold E.S.D. may be given.

Radium "puncture" is contraindicated.

4. *Acne Keloid (Dermatitis Papillaris Capillitii).* Situated on the nape of the neck and sometimes on the adjacent part of the occiput, this disease appears as a keloid-like tumor associated with and probably due to a sycosis vulgaris affecting this region.

Radium. Treatment is similar to that for keloid.

5. *Hemangioma (Vascular nevus).* Clinical features.

Usually congenital, hemangioma may appear a few days or weeks after birth. Occurring most commonly on the skin, it may be situated in almost any organ. In the larynx it may threaten death from suffocation. In a personal communication, Dr. B. H. Neiman reported to the writer a case of sudden death in which an angioma of the larynx causing suffocation was found post mortem. We have reported 2 cases of hemangioma of the larynx in adults successfully treated with radium.[24]

Angiomas of the skin are of variable size and shape. The surface may be smooth or papillated, level with the skin or elevated from a few mm. to many cm. above the adjacent skin surface.

Due to the contained blood, angiomas are always some shade of red or blue.

A subcutaneous angioma may appear as a bulging tumor many cm. in diameter. Although it is usually soft, compressible and often of normal skin color, at some point the skin may be

colored blue or red, giving a clue to the diagnosis.

Pathology. An angioma is composed of newly formed blood vessels supported by a variable amount of connective tissue.

Treatment. Surgery. Usually contraindicated.

Radium. With the introduction of radium a new era was inaugurated in the treatment of angioma. In most cases radium therapy is the method of choice.

Some of its advantages are:

The lack of danger; the painlessness; the excellent cosmetic results due to the fact that a fading and leveling rather than a destruction of the tumor may often be brought about.

In favorable cases the angioma may disappear leaving little or no trace behind. Irradiation of angiomas near the epiphysis of growing bones should be carried out with extreme caution. The secret of cosmetic success in angiomas of the skin lies in the avoidance of inflammatory reactions which may result in undesirable sequellae. The writer has published[26] photographs of a number of cases in which good results have been obtained.

Technic. This must be greatly modified to suit the case. Surface irradiations only are used; radium "puncture" is contraindicated. If improvement does not follow mild doses, treatment should be discontinued for at least several months.

1. Flat superficial angiomas (port wine stains). With ¼ strength glazed plaques screened with 0.1 mm. of lead 6 to 8 treatments of ½ hour each may be given daily or on alternate days. At 2 mm. distance the time may be doubled.
2. Flat deeply infiltrating angiomas.
   With the same applicator, screening and distance, the above dosage may be increased by ¼.
3. Raised hard angiomas.
   With the same applicator, screening and distance, the dosage for flat superficial angiomas may be increased by ½.

Fig. 5. (Left) Angioma of deep bluish red color in baby boy 5½ months old. Note top of ear destroyed by ulceration and deformity of eyelids and mouth. Photo Feb. 7, 1938. (Right) Patient in Fig. 5 after surface application of radium. Angioma resolved without inflammatory reaction. Photo Apr. 17, 1939.

4. Raised soft angiomas.
   Factors: Quantity = 500 mc. Screen = 2 mm. of brass.
   Size of applicator = 2 × 2 cm. Distance = 2 cm.
   Number of seances = 12. 50% threshold E.S.D. (approximately 914 mc. hours) may be given.
5. Deep subcutaneous angiomatous tumors.
   Factors: Quantity = 1000 mc. Screen = 2 mm. of brass.
   Size of applicator = 8 × 8 cm. Distance = 7.5 cm.
   Number of seances = 12. 50% threshold E.S.D. (approximately 13,200 mc. hours) may be given.

6. *Lymphangioma. Clinical features.* It may affect different areas, the axillae, buttocks,

lip (one type of macrocheilia) and tongue (one type of macroglossia) being favorite sites. Usually congenital, it appears often as a verrucous patch, yellowish, reddish or of normal skin color a few mm. to 10 or more cm. in diameter. It is composed of straw colored vesicles which may, if injured, exude a serous fluid. Outlying lesions a few mm. in diameter may occur adjacent to the main patch.

Pathology. The lesions consist of dilated lymph vessels lined with endothelium. In some cases lmyphangioma may be combined with hemangioma.

Treatment. Surgery. Lesions of small extent may be treated surgically.

Radium. In some cases radium is very efficient.

The technic is similar to that used for angioma.[1]

7. *Xanthoma Palpebrarum.* A benign new growth, single or multiple, situated on the eyelids and beginning often in the left upper lid. Lesions are a few mm. to 1 or more cm. in diameter, round, oval or irregular, slightly raised with sharp outline and smooth surface, of characteristic yellow (chamois leather) color and soft to the touch.

Treatment. Some cases do well under excision. In other cases radium (beta ray technic) combined with electrolysis may be used. The ultimate prognosis must be guarded as the development of new lesions is common.

(C) HYPERTROPHIES

1. *Verruca Vulgaris (Common wart).* While the cause is unknown, warts are probably feebly infectious and antoinoculable. They occur most often in the young on the hands and fingers. A wart-like growth in an elderly person should be suspected of being an epithelioma.

Tuberculosis verrucosa cutis which may resemble the common wart is situated on a chronic inflammatory base.

Treatment. Surgery. Excision is contraindicated.

Radium. With single warts, radium is very efficient and may be used when ordinary dermatologic treatment fails. In subungual warts radium may be signally useful. Radium plaques, ¼ strength, screened with 1/10 mm. of lead may be applied in contact daily or less often for a total of 1 to 3 hours in seances of 10 to 30 minutes each. The surrounding skin should be carefully protected with lead foil.

With palmar or plantar warts, radium is extremely efficient. Two or 3 times the above dose may be required. On exposed skin areas, reactions should be avoided.

With multiple warts covering considerable areas, gamma rays (25% threshold E.S.D. at 4 cm. distance) may be used.

2. *Verruca Acuminata.* Caused by the irritation of simple or gonorrheal secretions, these warts are contagious and antoinoculable. They occur as a rule on the mucous membranes of the genitals as moist cock's comb-like, vegetating growths which may be a few mm. to many cm. in diameter.

They may appear in pregnant women and disappear spontaneously after parturition. The condylomata lata of syphilis may resemble them closely.

Treatment. Irradiation similar to that for common warts may be used.

3. *Verruca Plana Juvenilis.* This clinical entity is often unrecognized. Appearing most often in the young on the face and backs of the hands, the lesions are usually multiple and irregularly grouped in patches. The single lesion is a few mm. in diameter, often polygonal in shape, with flat surface and of yellowish-white, bluish, or normal skin color.

Treatment. When the lesions cover an area of only a few cm., radium plaques ¼ strength screened with 0.1 mm. of lead may be applied in contact for a total of 2 hours in 10 or 20 minute seances daily or less often. In extensive cases, gamma rays (25% threshold E.S.D. at 4 cm. distance) may be used and are sometimes very efficient.

4. *Verruca Senilis (Verruca seborrhoica)* Seborrhoic warts occur in the elderly and most often on the face, shoulders and back. They may be single or multiple.

The single lesion varies in diameter from a few mm. to 1 or more cm. is rounded in shape, sharp in outline, with a granular, flat surface, of yellowish color and smooth to the touch.

It seldom degenerates into epithelioma.

5. *Keratosis Senilis.* These keratoses occur in the elderly and most often on the face and backs of the hands. They may be single or multiple.

The single lesion varies in diameter from a few mm. to 1 or more cm., is irregularly rounded and sharply circumscribed, with flat, slightly elevated crusted surface, of yellowish-brown or black color and hard to the touch. It often degenerates into epithelioma.

Treatment. Verruca senilis and keratosis senilis may be treated with subepithelioma doses using a radium plaque of ¼ strength screened with 1/10 mm. of lead. The prognosis is excellent.

6. *Arsenical Keratoses.* These are due to the long continued ingestion of arsenic which is sometimes given for psoriasis or other chronic dermatoses. The inorganic compounds (Fowler's solution or Asiatic pills) are more often responsible for keratoses than the organic compounds. Arsenic granules have been found in the lesions.

Arsenical keratoses occur especially on the palms and soles but also in other sites. They may degenerate into epithelioma. We have seen more than 50 keratoses, in many of which epithelioma had developed, distributed over the body in a patient who had taken for years, on his own initiative, Fowler's solution for psoriasis.

Treatment. Arsenic must be discontinued. Radium may be used according to the indications.

7. *Radiation Keratoses.* These may result from long continued slight exposures to x-rays or radium even when no inflammatory reaction has been produced. They may degenerate into epithelioma.

Treatment. Surgery. In many cases radiation keratoses due to x-rays or radium should be excised. A radiation ulcer lasting a year or more is usually epitheliomatous; if on the finger or hands, excision or amputation is indicated depending on the lesion.

Radium. Radiation keratoses of small extent may be successfully treated with radium by giving a subepithelioma dose.

Fractionated doses should be used.

With a ¼ strength applicator screened with 0.1 mm. of lead, 5 to 10 minute applications in contact may be given on successive days for a total of 30 to 60 minutes.

Abbe[27] pointed out many years ago that small epitheliomas due to x-rays may be healed with radium.

8. *Callositas. Treatment.* The cause, usually intermittent pressure, should be removed.

Radium. Beta ray technic with a radium plaque is usually successful although a callosity may disappear spontaneously if the cause is removed.

9. *Corns. Treatment.* The cause, intermittent pressure, due usually to ill fitting shoes should be removed.

Radium. Beta ray technic with a radium plaque may be used cautiously, a subepithelioma dose being given. Radium treatment should not be persisted in if a first course is not successful.

10. *Kraurosis Vulvae.* This disorder is usually classified as an atrophy of the skin. The cause is obscure. It is characterized by atrophy of the labia, leukoplakia and intense itching. Epithelioma may develop in the kraurotic or leukoplakic areas.

Treatment. A vaginal discharge, if present, should be treated.

Surgery. Excision of the kraurotic and epitheliomatous areas is usually indicated.

Radium. Irradiation is usually contraindicated. Radium (gamma ray technic as for other regional pruritus) combined with "calamine liniment" may relieve the itching.

(D) INFLAMMATORY AND GRANULOMATOUS INFILTRATIONS

1. *Furuncles.* Surgery. The usual surgical treatment is indicated.

Irradiation. X-ray treatment is used by some authors with good results. Ten to 15% E.S.D. may be given.

We have occasionally used gamma ray treatment.

Five hundred mc. screened with 2 mm. of brass, in an applicator measuring 2x2 cm. may be applied at 2 cm. distance. Twenty-five per cent threshold E.S.D. may be given.

2. *Carbuncles.* Surgery. The usual surgical treatment is indicated.

Irradiation. We have had no personal experience with irradiation. X-ray reports appear

favorable. Twenty-five per cent E.S.D. may be given. Theoretically the radium technic used for furuncles could be used with the dosage slightly increased.

3. *Erysipelas.* The diagnosis should be made certain by one familiar with this disease. We have had no personal experience with irradiation. X-ray reports appear favorable. Twenty-five per cent E.S.D. may be given. Gamma rays could doubtless be used with similar results.

We would not rely on irradiation alone in furuncle, carbuncle or erysipelas.

Fig. 6. (Left) Blastomycosis. Clinical and microscopic diagnosis. Photo Sept. 18, 1933. (Right) Patient in Fig. 6 after surface application of radon. Clinically well over 5½ years.

4. *Eczema.* Few dermatologists agree on what the term eczema should include. For our purposes the word eczema may be applied to dermatitis of a certain clinical type in which the cause is obscure. If an external irritant is found to be the cause, the affection may be called eczematoid dermatitis.

Acute Eczema. This may be greatly benefited by x-rays or radium.

Radium. Radium plaques, ¼ strength, screened with 1/10 mm. of lead may be applied in contact for 3 minutes daily or less often. A total of 30 minutes may be given.

In some cases 1000 mc. screened with 2 mm. of brass, in an applicator measuring 6x6 cm. may be applied at a distance of 4 cm. for 10 minutes daily or less often. Twenty-five per cent threshold E.S.D. may be given. Mild local remedies such as calamine lotion or zinc oxide ointment should also be used.

Chronic Eczema. A red scaly patch is often found on the back of the neck or in the flexures. Many cases formerly called chronic eczema are now known as neurodermatitis. This latter term includes localized or disseminated patches 2 to 10 or more cm. in diameter which are rounded or irregular in outline, circumscribed, thickened, scaly, red in color, and accompanied by intense itching. Lichen simplex chronicus (Vidal) may be included here.

An "eczematous" looking patch on one palm only may be syphilitic in origin.

Treatment. X-ray or radium treatment is usually very beneficial, x-rays being suitable for wide-spread and radium for localized lesions.

Radium. For localized patches ¼ strength radium plaques screened with 0.1 mm. of lead may be applied in contact for 5 minutes daily or less often. A total of 30 minutes may be given.

In some cases 1000 mc. screened with 2 mm. of brass, in an applicator measuring 6x6 cm. at 4 cm. distance for 20 minutes once or twice a week. Twenty-five per cent threshold E.S.D.

may be given. Striking results may sometimes be obtained from irradiation combined with soothing medicaments, such as "calamine liniment."

5. *Eczematoid Dermatitis.* On removal of the irritant spontaneous recovery usually occurs which may be hastened by soothing lotions or ointments. Irradiation is seldom indicated.

6. *Psoriasis.* X-ray or radium treatment is seldom indicated. Psoriasis being a chronic and practically incurable disease with spontaneous remissions and exacerbations, radiation sequellae may easily be produced by long continued irradiation. Ordinary dermatological treatment is much to be preferred to x-ray or radium treatment.

Psoriasis of the nail bed may be cautiously irradiated.

7. *Lichen Planus.* X-rays or radium may be very beneficial. In wide-spread lichen planus x-rays are more practical.

In localized areas and especially in lichen planus verrucosus radium is efficient in relieving the itching and hastening involution. Radium plaques, ¼ strength, screened with 1/10 mm. of lead may be applied in contact daily for 10 minutes. A total of 1 hour may be given. In some cases 1000 mc. screened with 2 mm. of brass may be applied at a distance of 4 cm. daily for 20 minutes. Twenty-five per cent E.S.D. may be given.

8. *Lupus Erythematosus.* The cause is obscure. Some believe the toxins of the tubercle bacillus are responsible. In contradistinction to Lupus Vulgaris it occurs commonly in North America. It usually begins after the age of 18.

Radium may be of value in hastening involution. Only very mild irradiation should be used, reactions in the skin being avoided. Intravenous injections of thiosulphate of gold are usually efficacious although relapses are common. Mild lotions or ointments should be used in conjunction.

9. *Tuberculosis.* (*a*) *Lupus Vulgaris.* The cause is the tubercle bacillus.

It seldom originates in North America, most cases being imported from European and other countries.

It usually begins before puberty. Situated most frequently on the nose and cheeks, the disease usually persists for many years. A destructive lesion of the nose and cheeks beginning in an adult is usually epitheliomatous or syphilitic (gummatous). Single destructive lesions in those past 40 may be epitheliomatous; multiple lesions, syphilitic.

In order of rapidity of destruction of tissue these 3 diseases may be arranged—gumma, epithelioma, lupus vulgaris.

Treatment. In lupus of the glabrous skin, radium may be cautiously used but is inferior to the Finsen light.

In lupus of the mucous membranes radium is of value. Beta ray technic is indicated. Subepithelioma doses should be used. In lupus of the glabrous skin MacKee[28] uses X-rays (225 R) unfiltered every 4 weeks, varying the treatment to suit the case.

(b) *Tuberculosis Verrucosa Cutis.* It occurs commonly in North America and most often in postmortem workers and those handling tuberculous products. Beginning most frequently on the knuckle of the hand it appears as a verrucous lesion with an inflammatory base 1 or more cm. in diameter. The course is chronic.

Treatment. Radium (beta ray technic) is indicated in subepithelioma doses. The results are excellent.

(c) *Tuberculous Adenitis and Scrofuloderma.* These disorders usually affecting the nodes of the neck and overlying skin may be greatly benefited by gamma ray therapy. The dose should be fractionated and reactions in the skin avoided.

10. *Syphilis.* Radium has been used to aid resolution of gummatous lesions but is of doubtful value.

11. *Leprosy.* Irradiation of the lesions has been used but is of doubtful value.

12. *Rhinoscleroma.* It seldom originates in North America, nearly all cases being imported from Russia, South America and other countries.

We have had no personal experience with irradiation. Liberthal, MacKee and others have had excellent results. A subepithelioma dose is indicated. MacKee says:[28] "This annoying and

hitherto intractable disease can be permanently cured with X-rays or radium."

13. *Actinomycosis* (*Lumpy jaw*). The cause is the ray fungus (actinomyces) which may gain access to the deeper tissues through a carious tooth or by attacking the tongue or other parts of the oral cavity. The subcutaneous tissue and skin of the facial or cervico-maxillary region are involved secondarily, exhibiting chronic inflammatory plaques, nodules and pustules of livid red color. The pus from the lesions contains yellowish granules the size of grains of sand composed of the ray fungus.

X-rays or radium surface irradiations (gamma rays) are indicated in intensive doses such as are suitable for deep seated epithelioma.

Potassium Iodide may be given internally.

Sulfanilamide has been used apparently successfully by E. M. Miller and E. H. Fell.[29]

If bone is attacked the prognosis is poor.

14. *Blastomycosis.* Radium may be used as for tuberculosis verrucosa cutis. Potassium Iodide may be given internally. The results of radium treatment are excellent.

15. *Sporotrichosis.* Treatment is similar to that used for blastomycosis. We have had no personal experience with irradiation. MacKee[30] reports excellent results from irradiation and potassium iodide internally.

(E) NEUROSES

Pruritus. Pruritus may be 1, a so-called neurosis without obvious cause; 2, a symptom of pediculosis, diabetes, liver disease, internal carcinoma, morphinism, etc.; 3, a symptom of certain inflammatory skin disorders such as eczema, lichen planus, etc.

In regional pruritus without obvious cause e.g. pruritus ani or vulvae radium or x-rays are often of great service. Anti-pruritic local applications (e.g. Ung. Resorcin comp. N.F.) may also be used.

One-quarter strength radium plaques screened with 0.1 mm. of lead may be applied in contact in 5 minute seances daily or on alternate days for a total of 30 to 60 minutes.

In some cases 500 mc. screened with 2 mm. of brass, arranged on a balsa wood block measuring 8x8 cm. may be applied at 4 cm. distance in 15 minute seances daily or on alternate days. Twenty-five per cent threshold E.S.D. may be given. Irradiation of the testicles must be avoided. Irradiation should be discontinued if relief is not easily obtained.

(F) AFFECTIONS OF APPENDAGES OF SKIN

(a) *Sweat Glands.* Regional hyperidrosis (axillae, palms and soles).

Gamma ray irradiation may be used as for regional pruritis. Aluminum chloride in 25% aqueous solution applied every 2 or 3 days is sometimes efficacious.

(b) *Sebaceous Glands.* 1. *Acne Vulgaris.* Radium is inferior to x-rays in ease of application. Gamma ray irradiation as for regional pruritus may be used combined with the usual dermatologic measures.

2. *Acne Rosacea.* In rosacea with acneiform lesions and oily seborrhoea, radium or x-rays are often of great service.

Gamma ray irradiation as for regional pruritus may be used combined with the usual dermatologic measures.

3. *Acne Varioliformis.* Gamma ray irradiation as for regional pruritus may be used combined with the usual dermatologic measures.

(c) *Hair and Hair Follicles.* 1. *Hypertrichosis* (*Superfluous hair*). Permanent alopecia can seldom if ever be obtained with radium or x-rays without permanent injury to the skin. We advise against irradiation in hypertrichosis.

2. *Sycosis Vulgaris.* In mild cases, the ordinary dermatologic treatment—depilation with forceps plus antiparasitic applications (e.g. Sulphur 10%, resorcin 5% in lanolin and vaseline) —should be used.

In severe cases, uncontrolled by such measures, depilation by radium or x-rays may be indicated.

Radium Technic. Assume following factors:

Quantity = 1000 mc. Screen = 2 mm. of brass.

Size of applicator = 4x4 cm. Distance = 4 cm.

One threshold E.S.D. (3070 mc. hrs.) may be given.

3. *Tricophytosis Barbae (Tinea sycosis).* Depilation of the beard with forceps, radium or x-rays combined with the usual dermatologic treatment is indicated. Radium technic similar to that for sycosis vulgaris may be used.

4. *Tricophytosis Capitis (Tinea tonsurans).* Depilation of the affected area with radium or x-rays combined with the usual dermatologic treatment is indicated.

Radium Technic:

Assume following factors:

Quantity = 125 mc. Screen = 2 mm. of brass.

Size of applicator = 10x10 cm. Distance = 1 cm.

One threshold E.S.D. (1385 mc. hrs.) may be given.

5. *Favus (Tinea favosa).* Depilation of the affected area with radium or x-rays combined with the usual dermatologic treatment is indicated.

Radium Technic:

The technic used for tricophytosis capitis may be employed.

SEQUELLAE

The skin may be injured and sequellae may develop as a result of injudicious irradiation with x-rays or radium.

Following inflammatory reactions caused by irradiation, there may occur in later months or years, recurring dermatitis, telangiectasia, persistent pigmentation, wrinkling, atrophy, scars, keratoses, ulcers or epithelioma.

Even if no inflammatory reaction has been produced, mild irradiation continued over long periods of time may cause similar effects.

Radium sequellae are usually milder in character and are seen less often than those caused by x-rays. This is probably due partly to the closer application of radium to the skin so that deeper structures are less influenced and partly to the fact that the use of radium in intensities comparable to those of x-rays is more restricted.

In affections dangerous to life one may, to a certain extent, disregard the possibilities of sequellae.

In affections not dangerous to life, risks of causing sequellae should not be taken.

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THE VENEREAL DISEASE CONTROL PROGRAM OF THE CHAMPAIGN-URBANA PUBLIC HEALTH DISTRICT

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CHICAGO

On January 1, 1938 the Champaign-Urbana Public Health District began actual operation. With its inception a new and untried system of venereal disease control was instituted. Since this program has now been in operation for one year, it was felt timely that a report of activities should be made in order that other communities may avail themselves of our experience if they should desire instituting a similar plan. Since this presentation is intended to be purely informative, it is our intention to state all facts in a purely unbiased manner. The disadvantages will receive as equal emphasis as the advantages.

In order that the approach to the subject may be systematic, we will arrange our discussion so as to take up in sequence

1. Laboratory facilities for diagnosis.
2. Method of reporting.
3. Recording and classification of cases.
4. Distribution of drugs.
5. Plan of payment for indigent cases.
6. Follow-up of contacts and lapsed cases.
7. Epidemiology.
8. Discharge of cases as cured.
9. Duplication of reports.
10. Education.

Through contract with the Illinois Department of Health, a branch of their laboratory is located on the second floor of our headquarters. In return for quarters, heat, light, gas and janitor service, all laboratory examinations are made for the Health District. All modern facilities are available therefore for venereal disease control such as the Kahn and Wassermann tests, dark-field for primary lesions, and smears for gonorrhea.

Copies of all laboratory tests are received by us and filed. All positive reports are checked against our records to determine whether the case has been reported. Each week, if no report is received, a form letter is sent to the specified physician asking him to report the case for whom the positive laboratory report was received. This method plus the fact that drugs are only distributed after cases have been reported, we believe, insures us of as complete reporting of venereal disease as could occur in any community. The form letter we send out on all positive laboratory reports of unreported cases is as follows:

Date.....

Dear Doctor .....:

Under date of..... laboratory report number..... on your patient..... was as follows.....

We have no record of this case and would appreciate your reporting it immediately on the customary form in order that our files may be brought up to date.

Thanking you, I am,

Yours very truly,

.....
Director.

Both by State Law and local ordinance it is required that all cases of venereal disease be reported promptly. Such reports are made directly to the Health District. After the case is recorded, the original copy is forwarded to the Illinois Department of Health at Springfield, Illinois. Blanks for the reporting of venereal disease are supplied gratis to physicians by the State Department of Health.

In our recording of venereal disease reported, we employ a Kardex system. The cases are filed according to physician. A separate file is maintained for cases of syphilis and cases of gonorrhea. For syphilis the cards contain all essential information as obtained from the original report received from the physicians. By means of differently colored signals we are able to make certain classifications of cases. For example a green signal at the left hand corner indicates a private case, a red signal indicates cases paid for by the Health District, and white indicates the cases paid for by the supervisor. A red signal at the right hand corner indicates a primary or secondary case. At the bottom of the card the names of the months are listed. A striped signal is employed to indicate whether the patient is under treatment during the current month. This signal is moved month by month as treatment progresses. If the case has lapsed the black and white signal is replaced by a blue signal which not only indicates discontinuance of treatment, but also the fact that the case is being investigated. When standard treatment has been completed and until final discharge of patient, the black and white signal is allowed to remain at month treatment was stopped until final disposition of case. A similar record is kept of cases of gonorrhea. If the attending physician is being

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From the Department of Pathology, Bacteriology and Public Health, University of Illinois, College of Medicine.

paid through district funds this fact is designated by a red signal.

Drugs are supplied to physicians gratis for the treatment of syphilis and gonorrhea. The only drug supplied for cases of gonorrhea is sulfanilamide. The available drugs are as follows:

Neoarsphenamine
- Unit 1
  - 2 ampules ..... 0.3 Gm.
  - 2 ampules ..... 0.45 Gm.
  - 1 ampule ..... 0.6 Gm.
- Unit 2
  - 5 ampules ..... 0.6 Gm.
- Unit 3
  - 1 ampule ..... 0.15 Gm.
  - 2 ampules ..... 0.30 Gm.
  - 2 ampules ..... 0.45 Gm.
- Unit 4
  - 5 ampules ..... 0.45 Gm.
- Unit 5
  - 3 ampules ..... 0.15 Gm.
  - 2 ampules ..... 0.30 Gm.
- Unit 6
  - 5 ampules ..... 0.3 Gm.

Mapharsen
- 5 ampules ..... .04 Gm.
- 5 ampules ..... .06 Gm.

Sulpharsphenamine
- 5 ampules ..... 0.1 Gm.
- 5 ampules ..... 0.2 Gm

Bismuth
- Salicylate in oil
  - Vial 10 cc.
  - Vial 30 cc.
  - Vial 60 cc.
- Thio Bismol
  - 12 ampules ..... 0.2 Gm.

Mercury
- Colloidal Sulfide 3%
  - Ampules of 10 cc.
- Mercurial Ointment 50%
  - Tube 10 Gm.
  - Tube 20 Gm.
  - Tube 30 Gm.

Sulfanilamide
- Tablets 5 grs.

All drugs are requisitioned by us from the Illinois Department of Health the first of each month. On the seventh of each month letters are sent by us to all physicians having cases under treatment. A requisition form is enclosed listing the serial numbers of cases under treatment. The physician indicates opposite each serial number, the drug and dosage required if patient is still under treatment or if case has lapsed it is indicated in a column set aside for that purpose. The requisition is forwarded to us, and upon receipt, the drug is packed, wrapped and stamped with the physician's name. The drug can then be called for by the physician or his representative. Only one month's supply of drug is distributed at one time. Drug can only be obtained for cases which have been reported to us. The following requisition form is employed by us:

CHAMPAIGN-URBANA PUBLIC HEALTH DISTRICT
Requisition for free drugs for the treatment of syphilis and gonorrhea.

To the Champaign-Urbana Public Health District:

I desire drug as indicated for the following listed cases which are still under my care with exception of any lapsed cases noted.

State Serial Number	Drugs Desired	Lapsed
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

.....M. D.

Date.....

Insofar as treatment is concerned, standards have been drawn up by the Champaign County Medical Society for syphilis and gonorrhea and a copy has been sent to all physicians who are members of the society. We do not have a clinic for the treatment of indigents, but through the cooperation of the Medical Society, have worked out a plan whereby the indigent patients are treated in the physician's office.

The Champaign County Medical Society appointed a permanent committee of three physicians to be known as "The Supervisory Committee for the control and treatment of syphilis" to act as advisory committee and to aid the Health District in execution of the program. Any physician who is a resident of Champaign County and regularly licensed to practice medicine in the State of Illinois is eligible to render service under this program.

Initially the plan involved cases of syphilis solely, but on July 1, 1938 was extended to include gonorrhea. Funds for the operation of the Health District are made available by a special Public Health District tax. Of these funds $3,500.00 was budgetted for our venereal disease program. Being vitally interested in these diseases during the infectious stages, cases coming under this plan were fundamentally limited to primary and secondary cases of syphilis, expectant mothers with syphilis and acute gonorrhea.

The definition of cases of syphilis to be treated was as follows:

a. All untreated syphilis patients, irrespective of the presence or absence of visible lesions, if
   (1) of either sex, and the duration of infection is not more than two years, regardless of the patient's age and

(2) females from 15 through 44 years of age regardless of a longer than two-years' duration of infection.

b. All treated patients in either of the above categories, who have received less than the equivalent of 20 injections of an arsphenamine and 40 injections of a heavy metal, within a period of two years.

The definition of cases of gonorrhea to be treated was as follows:

1. Acute
   a. In the male acute gonorrheal infection, shall be all males having urethritis with discharge, the smear from which contain gram-negative diplococci.
   b. In the female, all those having an acute urethritis, vulvitis, or vaginitis the smear from which shows gram-negative diplococci.

The fee is $1.00 per each injection of neoarsphenamine, $1.00 per each injection of heavy metal, and $1.00 per each treatment for gonorrhea. Patients eligible for payment by the district are automatically those on the list of the township supervisor, and those, after investigation, whose financial status renders them unable to avail themselves of medical care. Each patient is permitted to select his own physician. When a patient presents himself for payment by the Health District and is approved, the physician is notified by letter and is supplied with a book of vouchers such as the following:

State Serial No.....

I hereby certify that Dr.....has given me the treatments herewith listed, that the treatments were necessary, and that I am unable to pay for same.

Month..... Year.....

Week	Intravenous As	Intramuscular Bi or Hg	Other
1.....	.....	.....	.....
2.....	.....	.....	.....
3.....	.....	.....	.....
4.....	.....	.....	.....
5.....	.....	.....	.....

.....
Signature of Patient.

(This stub to be retained by Physician for one (1) year.)

State Serial No.....

This voucher to be forwarded by physician to Champaign-Urbana Public Health District at end of each month for payment of services rendered.

Month..... Year.....

Week	Intravenous As	Intramuscular Bi or Hg	Other
1.....	.....	.....	.....
2.....	.....	.....	.....
3.....	.....	.....	.....
4.....	.....	.....	.....
5.....	.....	.....	.....

.....
Signature of Physician.

.....
Address.

At the end of each month the vouchers are filled out as indicated and forwarded to the Health District office. Upon receipt the vouchers are checked against our case records and if OKed, an order is made by the Board of Health authorizing the Treasurer to issue a check in payment to the physician specified.

We are informed by the physicians as to lapsed cases either by telephone, by so designating on the monthly drug requisition form, or by the employment of a form included in the original book of report blanks are supplied by the Illinois Department of Health. As soon as this information is obtained, the case in question is contacted and returned for further treatment. Seldom is there much difficulty in bringing this about.

Information in regard to source of infection and contacts is obtained through the physician or patient. We attempt to obtain this information whenever possible and secure an examination of those concerned by a physician. In following out this procedure we keep an epidemiologic history on all cases where we are able to determine the source of infection and contacts. The following form is employed by us.

EPIDEMIOLOGIC HISTORY

.....
Disease

..... Contact	Age	..... Contact	Age	.....	
..... Contact	Age	..... Contact	Age	..... Contact	Age
		..... Source	Age		
		..... Case	Age		
..... Contact	Age	..... Contact	Age	..... Contact	Age
		..... Contact	Age	..... Contact	Age

All cases of syphilis and gonorrhea, after a standard course of treatment, and after clinical and laboratory examinations are negative, are reported to us as discharged by the attending physician. Immediately such cases are removed from our active file and a record is made of the date of release as cured. In addition to making our own record of such releases, we immediately inform the State Department of Health to this effect in order to clear their records. This procedure was instituted because we have felt that in the past too little attention has been paid to this particular phase and as a result the record files have become cumbersome and overburdened with inactive cases.

Our letter in regard to cases of gonorrhea and syphilis released is as follows:

Date.....

Dear Doctor.....

Kindly indicate below any cases of syphillis or gonorrhea released by you as cured during the past month, and forward this form to us with your requisition for drugs. This information will aid us in clearing our files of inactive cases.

State Serial Number	Date Released
.....	.....
.....	.....
.....	.....

Yours very truly,

.....
Director.

We of course have always been aware of duplication in reporting of venereal disease, particularly syphilis, and so we maintain an unusual alertness in this regard. This of course relates primarily to change of residence, or change of physician in the same community. It is not unusual to find the same case reported two or three times. As this fact is determined our records are corrected and the information forwarded to the Illinois Department of Health.

Insofar as education is concerned, we pursue the commonly accepted methods of distributing pamphlets, lectures, informal talks, newspaper articles and talking pictures.

Initially it can be said that our program is working with complete satisfaction to all concerned. Not only indigents but those ordinarily classed as borderline have available immediate medical care for venereal disease. The individual may choose his own physician in whom he has explicit confidence. The patient is relieved of any fear of discrimination which might be associated with a clinic inasmuch as the reason for his visit to the physician is not public knowledge. We believe that lapsed cases are fewer in our program than with a venereal disease clinic, and we believe it is easier to return a lapsed case to the private physician than to a clinic. Cases of venereal disease are placed under treatment rapidly which is of distinct advantage in rendering such cases non-infectious and preventing further spread. We have complete cooperation of the physicians in reporting, systematic treatment, and release, because each physician feels that he is a material part of the program, and knows that success or failure reverts to the attitude of each member of the medical profession. The physician retains that personal relationship with the patient which is to be desired in medical practice. Last but not least those funds expended for the care of such cases are well distributed throughout the medical profession to those interested in such type of work.

The objection might be raised that we do not have as complete records as are maintained in a venereal disease clinic. To the contrary, however, we have complete information as to family history, immediate family, income, type of employment, source of infection, contacts, treatment including follow up serology and release. It should also be stated that this information is kept as a cross file to the previously mentioned recording of cases by physician and serial number. We do not have any means of checking on whether the patient's urine is examined regularly for albumin nor do we have available means of running icteric indices. It is assumed that the physician acquainted with modern methods of anti-syphilitic treatment, will regularly examine the patient's urine for albumin. We of course do not have available the means of obtaining Kahn tests from large groups of individuals such as observed in some of the surveys carried on in other communities. Much of this type of work has centered around industry and we are distinctly not an industrial community. We are able to obtain serologic checks on the immediate family of cases of syphilis and other contacts. One phase in which we are distinctly lacking is in regard to combating congenital syphilis by early identification of the disease in the expectant mother and proper treatment before delivery. As soon as our maternal hygiene clinic* materializes, this problem will of course be solved. In closing, mention should be made that we are of course restricted by our budget to treatment of a limited number of cases. Our case load cannot comfortably exceed more than approximately 50 cases at any one time.

THE IMPORTANCE OF MILK OF LOW CURD TENSION IN INFANT FEEDING

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Recognition of the importance of the physical character of curd formed in the human stomach is a significant recent advance in the study of the digestion and consequent nutritional value of milk.

*Maternal hygiene clinic began operation on April 26, 1939.

Publication of Brennemann's treatise[1] two and one-half decades ago aroused serious interest in the digestibility of raw milk. The subject has received much attention both in dairy research and in infant feeding during the intervening years. The clinical observations that the vomitus of infants fed cow's milk raw contains hard leathery curds of large size, convinced the investigators[2] that milk, ordinarily considered a fluid, more logically should be thought of as a solid food. In support of this view, Talbot[3] showed experimentally that soon after it reached the stomach, milk forms clots or "hard, tough curds" and that the latter are casein complexes. Subsequent investigation disclosed that the physical character of these clots or curds is the important factor in the gastric digestion of milk.[4] The size and toughness of the curd is one of the important elements influencing the emptying time of the stomach of the infant after a milk feeding.

Since Brennemann's pioneer experiments, which proved that boiled, in contrast to raw milk, formed a finer casein suspension in the stomach, simulating human milk in this behavior, laboratory methods have been disclosed for the quantitative determination of the degree of hardness of curds, i.e., an in vitro method of determining the type of curd which forms when a given milk is fed.

This has opened a field for research into the factors influencing the curd tension, curd flocculence, toughness and size. As this knowledge has increased, ways and means of producing "low curd tension milk" which more adequately meets the infant's digestive requirements have been introduced. The most recent of these efforts utilizing the enzylac method, perfected jointly by the American Seal-Kap Corporation and the Armour Laboratories, has resulted in the production of a modified milk of uniform low curd tension. This milk is marketed as "soft curd milk produced by the enzylac process" or under the trade name of enzylac. In my experience and that of my co-workers, Dr. Howard Jacobs and Dr. Ellis Harris, over a period of twenty months, during which it has been fed to a carefully observed group of more than five hundred children, it has proved easily digestible, well tolerated, and well utilized. The group observed included prematures, normal new-born (initial feeding and continued diet) and older children.

Milk has been and still is the best substance that nature has produced for food alone, and the most nearly perfect food for infants and children. It is one food for which no satisfactory substitute has been developed. It is obvious that milk is more valuable as a food if it is made more easily digestible. The results of over eighteen years of research have indicated that human digestion of milk varies directly with the softness of the curd, all other factors being equal. Curd character, therefore becomes an accurate index of the digestibility of cow's milk.

Physicians, aware of the infant's difficulty in digesting unmodified cow's milk, have practiced milk modification for many years in an effort to find a suitable substitute for mother's milk Dilution, alkalization, acidulation, additions of cereals, lime water, and certain colloids such as pure gelatin, or special processes such as homogenization and base exchange treatment have been tried and found more or less successful. The purpose of all of these methods was to soften the tough, large curd of cow's milk and to make it behave more nearly like that of human milk when it entered the infant's stomach. Peptic digestion of the curd is thought to be a peripheral process. The greater the exposed surface of the protein coagula to the normal gastric secretions, the more rapidly digestion proceeds. This has been proved by experiments both in vitro and in vivo. They showed that "soft curd" milk i. e., milk so modified that its casein curds had become smaller and softer, was more easily digested than were the curds formed under like conditions from hard curd milk, because the soft, flocculent curds of the modified milk exposed a greater surface to the gastric juices.

The results of these experiments left the physician and nutritionist with the conviction that the digestion and consequent nutrition of the infant and growing child could be better facilitated by feeding a soft curd, low curd tension, milk.

Curd hardness, or tension of cow's milk is a varying factor. It differs with the different breeds of cattle and is affected by type of feeding, climate, season, period of lactation, and numerous other physical, physiological, and pathological conditions. Natural soft curd milk is said to be found in individuals of all breeds but predominates in the Holstein, Ayreshires, Guernseys, and Jerseys in the order named.

Hardness varies within relatively large limits, and numerous methods of its estimation have been devised.

The Hill curd test[5] *is of interest because it* was the first American method perfected. This method makes use of a special curd knife to estimate the toughness of the curd formed after the addition of calcium and acid to the specimen. It operates by registering in grams the force required to pull the multiblade knife through the coagulated milk. This method is not entirely satisfactory, because it calls for a large addition of calcium which under certain circumstances increases the reading. David Miller recommended the use of a hydrochloric acid pepsin coagulant. A committee of the American Dairy Science Association appointed for the purpose of investigating this subject reported favorably on this coagulant at the Annual Meeting, June, 1938. Their report gives the details of the technique.

The importance of an accurate method of measuring curd tension takes on particular significance because several ways of reducing it exist. The establishment of a standard method of determination affords the physician an opportunity to select the milk which meets his requirements. The method used by the authors employs the curdometer perfected by the Submarine Signal Corporation. The milk is coagulated by the use of hydrochloric acid and pepsin. This simulates the normal coagulation which takes place in the infant's stomach. The instrument is a sensitive one and its movements electrically controlled. It has proved satisfactory in our hands.

Amongst the numerous methods developed in the past for making cow's milk more easily digestible were those utilizing the action of digestive enzymes. As an example of such milks may be cited Finkelstein's Eiweiss, Chymogen and peptonized milk. Their usefulness was based upon the fact that curd formation in milk follows laws similar to those of jelling of irreversible colloids. In making them, an enzyme was introduced to form the curd which was then finely broken by mechanical mixing and the process of further digestion stopped by heat. Since curds when once formed do not tend to agglomerate firmly, this method produces a small, pre-formed curd which remains fine in the stomach. Obviously, such milk has a low curd tension but having an off-flavor is objected to by all but the youngest infants. The process of making these formulas is both tedious and intricate.

The more recent method of introducing a special proteolytic enzyme into raw milk in the holding tank before pasteurization overcomes these objections.[6] The pasteurization temperature stops the enzyme action before obvious curds are produced. Curd tension may be reduced by this process to any desired low limit. The soft, small, flocculent curd which results when enzyme treated milk is fed, and the convenience of being able to purchase this product direct from the dairy, favors its use.

A modified milk, to merit the pediatrician's recommendation, must meet certain specifications. It should contain all of the elements present in cow's milk and retain or be an improvement upon the natural flavor. While a curd tension of less than 30 as measured by the Hill test is considered to be a soft curd milk, experience has proved that a curd tension of less than 20 grams give uniformly good feeding results. If in addition to easy digestibility its modification for individual formulas is simple and practical, it is certain to prove a useful adjunct in infant feeding.

The enzyme treated milk with which we have been feeding our infants during the past eighteen months meets these requirements. None of the food elements is removed. It has the same coloric value as untreated cow's milk and it need not be boiled and cooled in the preparation of the formula. This eliminates labor and reduces the possibility of human contamination during handling. This is a factor of no inconsiderable importance since milk raised to the boiling point and contaminated while warm furnishes an unusually good media for the growth of bacteria. In contrast, a commercial pasteurized soft curd milk, produced and bottled under modern sanitary conditions, delivered to the home at a low temperature, and kept at that temperature, offers the minimum possibility for the growth of bacteria.

In using a commercial milk of low curd tension, labor and cost of boiling formulas for infants' feeding is eliminated. Holding it at a temperature below 50 degrees C. and adding water and sugar mixtures of like low tempera-

tures lessens the danger of rapid bacterial multiplication. The dairy industry, public health authorities, and all others who have engaged in milk research are in accord on the effectiveness of the bacteriastatic value of low temperatures in the control of indigenous and contaminating flora in milk. The usefulness of enzylac as a basic infant food and supplement to the diet of older children brings the advantage of safety, digestibility, economy, and convenience. It is of clinical interest that undigested protein curds do not appear in the stools of infants fed with this milk. This is offered as evidence of the digestibility of the casein component.

Studies in vitro[7] show that the rate of breakdown of curds from milks with either soft or hard curd tensions is slow at the higher pH level[6] although soft curd milk is acted upon more quickly. Digestion of peptic curds is believed to be a peripheral process. It is apparent that soft curd milk which forms small curds exposes a greater surface per unit of protein casein to the digestive juices than does hard curd milk with its larger and firmer coagulum. Because of this physical difference peristalsis tends to increase the exposed surface of the softer curd in contrast with that formed from high tension milk which is not so easily mechanically distintegrated.

Espie and Die,[2] in a series of experiments, were able to show that doubling the curd tension of milk increases the length of the digestive period from 30 to 65 per cent., and gave as their opinion that the reduction in duration of the digestive period was due entirely to reduction in hardness of curd. Doan and Welsh,[11] studying the problems of soft curd milk by observing the emptying time of the stomach, concluded after a series of regurgitation experiments that soft curd milk leaves less residue in the stomach after a given interval than does milk having a high curd tension.

Jeans and Stearns showed that soft curd milk is of value in the feeding of infants as judged by growth, general condition and retention of nitrogen, calcium and phosphorus. These authors concluded that in general milks which form soft curds are well tolerated and utilized by infants and children.

Hill[5] and Morris and Richardson,[8] Jeans, Stearns, et al,[9] working with soft curd milk modified by various methods have all reported clinical success in the feeding of normal infants and have in their clinical studies furnished undeniable evidence that a soft curd milk is easily digested by infants, children, convalescents, and older persons. They expressed the opinion that milk of low curd tension leaves the stomach more quickly than does milk not having this property, and that this is undoubtedly due to the better digestibility of soft curd milk in the stomach.

At the completion of our tests with enzylac[10] the results were summarized as follows:

1. The growth and development of infants fed enzylac compared favorably with those of the control group.

2. There was a statistically significant difference in the average number of stools per day in the two groups. Those fed enzylac had fewer stools.

3. The hemoglobin and erythrocyte curves of both groups are similar and normal.

4. The blood calcium and phosphorous curves of both groups followed normal levels.

5. Based upon these observations it is therefore concluded that commercial pasteurized milk with a curd tension reduced to below 20 grams by proteolytic enzyme action is desirable for infant feeding, since it is well tolerated and digested, and in addition, easily, economically and safely prepared. In its preparation the bacteriastatic value of handling a food product at a low temperature is utilized in contrast to making the milk soft curd by boiling and allowing to cool slowly.

185 North Wabash.

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CONVULSIONS UNDER ANESTHESIA

With the Report of Four Cases

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That there has been a steadily increasing interest in the problem of convulsions under anesthesia is evidenced by the large number of cases reported during the past ten years, particularly in the British medical literature. Prior to that time very little was written upon this subject, it being a matter of conjecture whether this was due to failure of observation or that this condition did not arise as often as it does today.

A majority of the cases reported are of children, a large number of whom were toxic patients, frequently suffering from gangrenous appendicitis with a generalized peritonitis.

The anesthetic usually employed when this complication has arisen is ether; therefore the term "ether convulsions" has come to be used, although the same condition has been observed with other general anesthetics. The syndrome has been rather uniformly described, but its causation and treatment would seem to vary with each commentator, indicating that the proper treatment is still a matter of wide dispute.

These convulsions are not to be confused with muscular twitchings which may occur during the induction of the anesthesia and subside as the anesthesia deepens. The true convulsions do not ordinarily begin until the patient is under deep anesthesia and often occur towards the end of the operation. There also may be repeated attacks of these convulsions, sometimes subsiding until the patient is removed from the operating room, when they may again recur.

In typical cases, the first signs of impending danger are usually observed by the anesthetist as minor twitchings of the facial muscles which may gradually increase in severity, spreading downward to the upper extremities and then include the trunk and lower extremities.

Convulsions under anesthesia are both clonic and tonic, and may become so severe as to interrupt the surgery until the movements have diminished or subsided. The pupils of the patient's eyes become widely dilated and fixed, and the temperature often rises rapidly, reaching 105° or 106° within a very few minutes while the pulse is correspondingly accelerated. The case may go on to fatal termination with the first convulsion which usually lasts from two to four minutes; or it may subside only to be followed by other similar convulsions which may or may not be fatal.

As yet the treatment for this condition is admittedly unsatisfactory, and it will probably remain so until the exact cause is known. Many theories have been advanced in an attempt to explain the syndrome and to give a basis for its treatment. Theories which have been given the most serious consideration are:

1. Impurities in the ether. Particularly aldehyde and peroxide have been thought to be responsible. This, however, has been disproven by controlled chemical analyses.

2. Idiosyncrasy of certain types of patients to ether.

3. Excessive loss of carbon dioxide, producing lowered serum calcium and thus "tetany-like" convulsions. On this basis calcium salts have been administered.

4. Hyperthemia. Many patients have developed very high temperatures after being on the operating table for but a very short time. Therefore, cooling of the operating room and sponging of the patients have been advised as remedial measures.

5. Toxemia. Numerous cases have occurred in very septic patients. With these, the minimum amount of surgery is advised; for instance drainage only in ruptured appendicitis cases with generalized peritonitis.

6. Surgical trauma. Undue handling of tissues has been thought to induce convulsions in certain cases.

7. Hypoglycemia. This may be a result and not a cause of the convulsions. Intravenous glucose solutions have been administered to allay this condition.

8. Over-oxygenation. Allowing the cells of the medulla to absorb more ether in the presence of excess oxygen.

9. Atropine over-dosage.

10. Instability of the nervous system.

It will be noted that organic lesions of the brain have not been included in the above enumeration of causes of convulsions under anesthesia. Some cases have been reported in which autopsy has revealed brain tumors, which usually showed hemorrhage as the primary cause of the convulsion and death. However, in our series of cases there was no previous history of convulsions nor any symptoms referable to the central nervous system. Also, the two cases which had survived, developed no further convulsions and no symptoms which might be explained on an organic basis.

Many other theories in regard to convulsions under anesthesia have been offered—some of which conflict with others—but as yet none of these are sufficiently proven to warrant their discussion here. Whether alone, or in combination, any of the theories enumerated above can explain this problem is a controversial matter; but they probably will serve as a starting point for the solution. When we consider that almost fifty per cent. of these cases terminate fatally, one may readily appreciate the seriousness of this complication. The following four case reports are presented with the hope that they contribute to what is already known on this important subject.

REPORT 1. A five-year-old female entered the hospital on March 1, 1937, with a history of an acute illness consisting of vomiting, generalized abdominal pain and fever of three days' duration. Five hours before entrance, the abdomen had become distended. The temperature was 102° and the white blood count, 21,250, with 97% neutrophiles. The physical findings were mainly in the abdomen and consisted of marked distention with a moderate generalized tenderness and rigidity which was most marked over McBurney's point.

A diagnosis of acute appendicitis was made and surgery resorted to. The anesthetic used was ethylene and ether. Upon opening the abdomen, an acutely inflamed gangrenous appendix, perforated at the base and with free, purulent fluid in the abdomen, was found. When the appendix was being clamped, the patient suddenly became cyanotic and started to twitch in the muscles of the face, soon followed by convulsive movements of the arms. The anesthetic was stopped, oxygen administered and the convulsions diminished. But as soon as the anesthetic was resumed and deepened, the convulsions recurred to such an extent that it was again necessary to discontinue the ether. These seizures lasted from two to three minutes.

The operation was completed under very light anesthesia and a drain inserted. Then, while the patient was still on the operating table, there occurred a third and very severe convulsion, in which practically the entire body was involved. The pupils were dilated and fixed, and the patient vomited much dark brown fluid material. This convulsion lasted from three to four minutes.

Calcium gulconate was administered, as was glucose solution. There were recurrences of the convulsions at intervals of about four or five hours and lasting from three to five minutes. The patient's temperature rapidly arose to 108° (R), the pulse was greatly accelerated until imperceptible, and she expired about fifteen hours after entering the hospital.

REPORT 2. A twenty-three-year-old white male entered the hospital with abdominal complaints of one day's duration. A diagnosis of acute appendicitis was made and surgery advised.

During the maintenance of anesthesia (ethylene and ether), while the purse-string suture was being put in, the patient developed a convulsion which started in the face and rapidly generalized. It was first clonic and than became tonic, lasting about three minutes. Cyanosis was marked. The anesthetic was stopped and oxygen and carbon dioxide were administered. The convulsion ceased and the patient's color returned to normal.

Anesthesia was completed with cyclopropane. During the seizure, the patient's temperature had increased to 106° (ax.), pulse to 160, respirations to 48, and his blood pressure rose to 280 systolic, whereas at the beginning of the operation, the blood pressure dropped to 86 (systolic.) The pulse was 148 and of fair quality and respirations were 24/min.

Postoperatively, he was given antistreptoccic sera and intravenous glucose solution. He made a favorable recovery with no repetition of the convulsions.

REPORT 3. The patient was an acutely ill nine-year-old female in whom the diagnosis of acute appendicitis was made and an immediate operation was arranged for.

The anesthetic used was ethylene and ether. On exploration, an acute gangrenous appendix was found and in the course of its removal, the patient became cyanotic and had a severe convulsion which lasted for about ten minutes. The convulsions ceased and the surgery was completed.

Postoperatively, the pulse became very rapid (196/min.) and thready, and the temperature arose to 106° (ax.) The respirations became shallow and cyanosis reappeared. Intravenous glucose solutions and stimulants were administered, but the patient expired about four hours after entrance to the hospital from what appeared to be an overwhelming toxemia.

REPORT 4. This thirteen-year-old white male was sick for about thirty-six hours before entering the hospital with an abdominal complaint consisting of nausea, vomiting and abdominal pains. He had a generalized abdominal tenderness which was most marked at McBurney's point. The temperature was 99.4° and the white blood count 22,500. A diagnosis of acute appendicitis was made and surgery advised.

Under ethylene and ether anesthesia the abdomen was opened and an acute gangrenous appendix, with a rupture at its base, was found and removed. Toward

the conclusion of the operation there occurred a convulsion consisting of a twitching of the facial muscles and clonic movements of the upper extremities. The anesthetic was discontinued and oxygen given, causing the seizure to abate after about three minutes duration. The operation was completed under light anesthesia with no further convulsions. The patient subsequently had a satisfactory postoperative recovery.

CLINICAL OBSERVATIONS OF TWO THOUSAND PEPTIC ULCER CASES

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In the last twenty years a great deal of discussion has arisen over the treatment of peptic ulcer. We wish to present some observations that have been made during that time in the study of two thousand peptic ulcer cases.

A survey of the extensive literature on the subject reveals a marked difference of opinion as to the cause and treatment of this chronic disease, yet these same investigators seem to record similar end results irrespective of the treatment employed. These resutls are not satisfactory. Many physicians feel that it is not worth the effort to carry out a detailed management because the majority of patients will have a recurrence of symptoms within a few years. However, the problem of peptic ulcer is before us and the distress from ulcer and its complications is one of the most common causes for which young people seek medical advice.

In presenting these observations, we hope that our experience may be of help to the physicians who do not have access to teaching hospitals and to those who are able to hospitalize only a few of their medical patients. A great many of us who live in small communities do not have the advantages of the equipment in large laboratories. We cannot do frequent carbon dioxide and chloride estimations of the blood to determine alkalosis. We are forced, through economic conditions, to treat most of our ulcer cases by some ambulatory management and must depend upon a good clinical follow-up in the handling of these cases.

The data accumulated in this study have been compiled from patients who have been treated by the diet-alkali management originated and perfected by the late Bertram W. Sippy.[1] A modification of this management has been used and a large majority of the cases treated by an ambulatory method. We have adhered strictly to the dietary regime and principles of alkaline therapy.

From the Division of Medicine, The Pelton Clinic. Read before the Section on Gastro-Enterology and Proctology, American Medical Association, San Francisco, June, 1938.

ETIOLOGY

A discussion of treatment cannot be undertaken without considering those factors which cause the lesion and prevent it from healing.

Ochsner[2] and his co-workers concluded that the treatment of peptic ulceration is unsatisfactory because in too many instances attention has been focused on the ulcer itself without realizing that the ulcer is merely a symptom of a generalized disorder. They conclude that unless the underlying factors which are responsible for the predominating symptoms, in each instance, are corrected the results of therapy will be unsuccessful. These same investigators have discussed the uncontrollable factors and the controllable factors in the cause of ulcer. In the first group, the uncontrollable factors are: (1) tissue susceptibility; (2) constitutional predisposition. In the second group, the controllable or precipitating factors are: (1) hyperacidity; (2) hypersecretion; (3) focal infection, and (4) gastric trauma. All these factors have been observed and discussed by many investigators. It is significant that in this series a hereditary tendency was observed. There seemed to be an unknown factor in these cases which can only be explained by a constitutional predisposition. Individuals who do not have ulcers may have any one or all of the precipitating factors, but if this unknown predisposing factor is not present an ulcer will not develop.

Mann,[3] in his experiments on animals, has shown conclusively that ulcer occurs in the mucosa subjected to the action of acid gastric contents and unprotected by the neutralizing mechanism. Similar results were obtained by Debakey[4] when he proved that of all the constituents of alkaline duodenal juices, bile is the most effective in preventing the formation of jejunal ulcers. Pancreatic juice is the next most protective and duodenal secretion the least. A few years ago, Palmer[5] reported a study of his cases and concluded that ulcer does not develop in the stomach without the presence of acid. Rosenow[6] demonstrated that focal infection plays

an important role in the etiology of ulcer. The above factors undoubtedly have an influence on the causation and chronicity of ulcer; however, the observations in this study corroborate the work of Rivers[7] in that the most outstanding single factor that causes recurrence of ulcer symptoms and prevents an ulcer from healing is the neurogenic one.

It has been observed repeatedly that patients will go along on ambulatory management symptom-free for months or even years until they develop some nervous upset, emotional strain or a period of tension, then they experience a recurrence. The question repeatedly arises in our minds: Why does one individual develop an ulcer and another does not? Both have the acid, infection, trauma and neurogenic factors. This question must remain unanswered until we determine that unknown fundamental predisposing factor in ulcer patients. A few years ago, in a personal communication, a noted physiologist made this statement: "I have spent years experimenting on animals to determine the cause of peptic ulcer; I am going to quit because I cannot reproduce the nervous system of man in the dog."

DIAGNOSIS

It is not difficult to make a diagnosis of peptic ulcer. A good detailed history is most important. The patient will describe his distress as heart burn or as burning, gnawing, bloating, boring, stabbing and aching. Irrespective of how the distress is described, all patients characterize their symptoms in the same manner. The distress will appear at periodic intervals lasting from a few days to a few weeks. There may be months of freedom between attacks. Each period of distress will be characterized by five points, originally described by Sippy[1]: (1) the distress will come on from one to three hours after meals; (2) it will never be present in the morning before breakfast unless there is a retention over night from obstruction; (3) adequate alkali will always relieve the distress; (4) food taking gives relief, and (5) emptying the stomach either by vomiting or aspiration relieves when no complication is present.

If the patient has not recognized these details, their presence can be determined by instructing the patient to keep an accurate diary for five days, noting the exact time the distress comes on after meals. After the distress appears, test with adequate food and at another time, with an adequate alkali. We consider calcium carbonate, grains 30, and calcined magnesia, grains 30, sufficient to alkalinize any stomach content. At another time, remove the stomach contents by aspiration. Record the findings from these tests in the diary. The results of this test-out period will give reliable data that can be used in the diagnosis of peptic ulcer.

After arriving at a clinical diagnosis, a roentgenological study is made as confirmatory evidence and for the purpose of locating the lesion as gastric or duodenal. It is not our purpose to minimize the value of these roentgenological studies, but many physicians do not have an expert roentgenologist available and must depend on their clinical findings. The majority of peptic ulcers can be accurately diagnosed without the use of the roentgen ray. Fluoroscopy is of more value than films. Many times the films fail to show the ulcer defect in the duodenum because of spasticity, while with a careful fluoroscopic examination the crater will fill and the defective cap will be readily visualized.

In the diagnosis of ulcer, an Ewald test breakfast is clinically as valuable as the fractional meal. If no free acid, a milk coagulation test will determine enzyme activity. Stool examinations for occult blood are done routinely. A careful physical examination together with other routine laboratory studies are imperative. All of these procedures can be carried out in the office of any practicing physician.

TREATMENT

Any thorough plan of treatment must be based upon sound physiological principles. There are two fundamental reasons why any management may fail to give permanent results, (1) the cause of ulcer is not known; (2) the nervous mechanism and individual susceptibility cannot be controlled.

A discussion of ulcer treatment cannot be undertaken without considering separately the problems of gastric and duodenal ulcer. The problem of gastric ulcer has been of great interest in the past because many investigators consider this lesion potentially malignant. Evidence is lacking that peptic ulcer changes into a malignancy. Many believe that the course of an ulcer continues as such and that a cancer starts as a

neoplasm. Because of this difference of opinion, some favor a radical resection of all gastric ulcers; others favor medical management.

In this series only eight per cent. had gastric ulcer. A clinical trial period of management for a few weeks was followed in order to differentiate gastric ulcer from carcinoma. The results over a period of years have been so favorable that it is not deemed necessary to resort to surgery and to the pathologist in order to make the differential diagnosis.

If at the end of one month of accurate management the ulcer defect has disappeared or is diminished in size, the subjective symptoms relieved, and the benzidine test shows an absence of occult blood, the patient is advised to continue medical management under very close observation. However, if any one or all three of the criteria consistently fails to respond, surgical interference is advised. Jordan[8] and others have used this plan of differentiation between gastric ulcer and carcinoma for years and report favorable results. Not all physicians have access to well-trained surgeons capable of doing stomach resections; therefore, if this clinical trial period is followed accurately and honestly, these patients will not be subjected to the high mortality of a gatsric resection for simple gastric ulcer.

In this series, several patients continued to show occult blood in the stool, at the end of a month's accurate management, but refused to have surgery. These were carried along under strict observation and within a short time the blood disappeared from the stool. One patient showed blood in the stool for three months. The diagnosis was carcinoma, but he refused to be operated on and ten years later we found him in excellent health.

The treatment of duodenal ulcer is more difficult than that of gastric ulcer. The danger of malignancy is not present but there are other complications, such as spastic or scar tissue obstructions and continued night secretion, that make these cases more difficult to manage.

In any successful management of duodenal ulcer there are three factors that must be considered: (1) the free acid must be neutralized; (2) the stomach must empty its contents in normal time, and (3) an attempt must be made to stabilize the vegetative nervous system. The unsatisfactory results are caused, in most instances, by failure to recognize one or all of the above factors. In carrying out ambulatory management attention to details is very important. Each patient is put on a liquid-soft feeding for a period of two or three weeks, which consists of thin cereals, soft eggs, milk or cream soups, broth, custards, soft puddings, rice, hearts of toast, butter, milk and cream. The food is taken in three or four small meals daily, depending upon the economic status of the patient. Most of these cases are allowed to continue their work. After two or three weeks, the diet is changed to three small meals a day consisting of the soft foods with the addition of pureed vegetables, simple fruits, as orange juice, apple sauce, pear sauce and peaches. Scraped beef is added and other foods allowed as the management progresses. The one important factor in the diet is to keep the meals small and the food in an easily digestible form. Powders are given every two hours during the day, beginning one hour after each meal, until 7 P. M., and in the evening at 7:30, 8, 8:30 and 9. A No. 1 powder containing calcium carbonate, grains 30; and a No. 2 powder containing calcium carbonate, grains 10, and calcined magnesia, grains 10, are used. These powders are alternated and the frequency with which No. 2 powder is given depends upon the laxative effect desired. Milk and cream, each one and one-half ounces, is given every two hours beginning one hour after the first powder. This management provides the stomach with food or alkali every hour from breakfast until 9 P. M. Belladonna is used in the majority of cases. Frequent aspirations prove that the first important factor in medical management, the control of free hydrochloric acid, has been accomplished.

Pyloric obstruction is the most common complication which prevents a duodenal ulcer from healing. Failure to recognize this complication results in failure of the medical management. The majority of obstructions are due to spasm and inflammatory swelling and will open up in a few weeks if the stomach is emptied at bed time. The patient may be taught to aspirate at home. As soon as the aspirations show no retention, they are discontinued. At the end of a few weeks, if from four to ten ounces are aspirated each night, it is assumed that the obstruction is due to scar tissue and surgery is advised. Many obstructive cases have night pain between midnight and 3 A. M. This is due to

a continued secretion of acid gastric juice and can be controlled by an additional aspiration at midnight. By these methods, the normal emptying time of the stomach or the second important factor of a successful medical treatment is fulfilled.

Criticism of the alkali management is based on the theory that these patients develop a disturbance of the acid-base equilibrium. For this reason, sodium bicarbonate as a neutralizing agent is not satisfactory. Calcium carbonate is used in most cases and the number of patients experiencing symptoms of alkalosis has markedly decreased. We are not unmindful of the fact that susceptible individuals may tolerate alkali poorly. These symptoms are readily controlled by discontinuing powders every four to six weeks for a five day period. The diet and milk and cream are continued as usual. Alkalosis will be very rare if these details are followed. Such cases do well and the free acidity is controlled when tribasic calcium phosphate and magnesium are used.

This management, as outlined, is continued in detail for nine months to one year, depending upon the individual case. During the succeeding twelve months certain articles of diet are to be avoided and the number of powders gradually diminished. An educational program is carried out with each patient as to the type of existence best suited to his case and must be followed if we are to reduce the number of recurrences. Each case is a separate problem and must not be considered as merely a part of a group. These individuals are instructed to live a life as free as possible from tension and worry, not only for one year but for the remainder of their lives, realizing that during periods of nervous strain, ulcers recur.

Fogelson[9] reports good medical results with mucin. Of the parenteral methods, the larostidin treatment which consists of injection of histidine daily for twenty-one doses, is the most popular at the present time. Synodal, a preparation containing emetine hydrochloride, is also used for treatment of ulcer by injection. Sandweiss[10] proved by clinical experiments that he obtained the same end-results whether he used larostidin, synodal, dead bacteria in vaccine or distilled water as an injection in the treatment of duodenal ulcer. They all gave fairly good immediate results but all had 85 per cent. recurrences within six months. Eusterman[11] and Rivers[12] state that the results from parenteral methods and mucin have been disappointing. The aluminum hydroxide treatment deserves consideration. Woldman and Rowland[13] believe that a continuous 24-hour adsorption of gastric acid by aluminum hydroxide is useful in treating acute peptic ulcer. If the continuous drip is not used, many investigators doubt that the acidity is sufficiently controlled or the pylorus sufficiently relaxed. This method is impractical for the majority of patients.

Brown,[14] Jordan,[15] Eusterman[16] and Rivers[7] are strong advocates of the alkali management. Brown[17] obtained good results in 66 per cent. of the cases studied. Jordan[15] found that nearly one-half of duodenal ulcers treated medically have one or more recurrences within a period of five years after treatment. These results are based on strict alkali management, similar to that advocated by Sippy.

In this series of two thousand cases over an average period of five years, we obtained 60 per cent. good results. The important question is: How can we prevent recurrences? The ulcer problem must be considered as a life problem and not as a disease of a few weeks' duration. As is so frequently stated, "you must spend one year healing the ulcer and the rest of your life keeping it healed." Until we know the predisposing factor or factors causing ulcer, we must depend upon a rigid educational program for our ulcer patients to prevent recurrences. The results of ambulatory alkali management are essentially the same as those of strict alkali management. We must conclude that the solution of the ulcer problem is far from satisfactory.

CONCLUSIONS

An ambulatory diet-alkali management has been presented for the treatment of peptic ulcer.

This management can be carried out by physicians who do not have access to investigative laboratories and teaching hospitals.

The etiology of peptic ulcer is unknown. In this study a familial tendency was observed.

A "test-out" is suggested to aid in the diagnosis of peptic ulcer. This is accomplished by the aid of a clinical diary.

A trial period for the differential diagnosis of gastric ulcer and carcinoma is essential.

Three factors that must be recognized in any successful management of duodenal ulcer are discussed.

Disturbance of the acid-base equilibrium will rarely occur if the details of this management are followed.

The recurrences depend upon the completeness of the original cure and the more difficult problem of individual susceptibility.

The result of ambulatory medical management in two thousand cases over an average period of five years showed 60 per cent. good results. This is essentially the same as the strict medical management.

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PRONTOSIL IN PYOPNEUMOTHORAX

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Fluid appearing in the pleural cavity during the conduction of a pneumothorax is of common occurrence and usually of little moment. Infrequently, however, there arises a type of pleural infection accompanied by purulent fluid, which takes on an alarming and serious character, causing an intense toxemia, long-drawn out, and often having a fatal termination. Fluid of this nature in the pneumothorax cavity, a pyopneumothorax, has many more elements of danger than the commonly-understood empyema, due perhaps to the large pleural surface exposed, with the great difficulty present for the walling-off of the fluid, and for the reason it occurs in a tuberculous person.

Two patients with pleural infection of this toxic type recently presented themselves for treatment; in both of which the fluid was ushered in in the classical manner, with chills, a temperature of 103 to 104, severe pain in the affected side, dyspnea and vomiting; the change from a comfortable, afebrile patient to a very sick one being very abrupt. The customary aspiration at once resorted to brought the usual slight and transient relief. Sterilization of the infected pleura by instillation of the many dyes and antiseptics that have been brought to notice, including oleothorax, had by experience not only proved disappointing, but had often appeared to be the introduction of another foreign body in an already injured pleural cavity. The shortcomings of these preparations being evidenced by the growing advocacy of thoracoplasty as the end resort, and this before the formation of chest-wall fistulas, the development of amyloid disease, or the wasting of the patient. Woodruff, 1938,[1] in a review of 154 cases of tuberculous empyema, 121 of which developed during the course of induced pneumothorax, gives the following figures for that group which had a secondary (mixed) infection. When aspiration alone was used; none well and working, 83.3% dead. With saline irrigation and the instillation of various dyes, 15% well and working, 58% dead. When oleothorax was employed, 23% well and working, 46% dead. And where thoracoplasty

Read before the St. Louis Medical Society, St. Louis, September 27, 1938.

was finally performed, 41.7% well and working, 33.3% dead.

From these figures it can be seen that the methods of managing such cases had not attained all to be desired; leaving the problem still before us of bringing about sterilization of the infected pleural cavity, of preventing the complications mentioned, of avoiding the necessity of thoracoplasty, and the while maintaining the pneumothorax. Dettol, a saponified xylenol derivative, was first employed, by instillation into the pleural cavity after aspiration; Gilmour, 1937,[2] having reported benefit from its use in a case of toxic, purulent fluid developing during the course of pneumothorax treatment, in which, however, open tube drainage was carried out at the same time. In our cases the dettol had a gelatinizing effect on the fluid, making its withdrawal on the fifth and seventh instillation almost impossible, so the use of the preparation was abandoned.

Treatment with prontosil and sulphanilmide was next considered; a number of medical writers having reported good effects from their use in empyema, though no reference could be found to the use of this chemical group in pyopneumothorax. Tixier and Eck, 1935,[3] give an account of the recovery of three children with purulent pleural effusion, containing hemolytic streptococci, by the oral use of sulphanilamide without the necessity of surgical assistance. Douthwaite, 1935,[4] mentions a case of bronchopneumonia accompanied by a turbid pleural effusion containing streptococci, in which treatment with prontosil intramuscularly and sulphanilamide orally was followed by disappearance of temperature and absorption of fluid. Brown, 1937,[5] reports two cases of postinfluenzal, streptococcal empyema treated with sulphanilamide orally and prontosil intrapleurally with recovery and disappearance of fluid roentgenologically. This was the only reference found to the instillation of the dye into the closed pleural cavity. Gay and Clark, 1937,[6] state, "Sulphanilamide prevents the evolution of an invariably fatal streptococcus empyema in rabbits when it is given repeatedly and in sufficient doses subcutaneously." Ballon and Goldbloom, 1937,[7] report a case of empyema accompanied by numerous complications and relapses in which a rib resection had been resorted to. After sulphanilamide was given orally, and prontosil intramuscularly and into the thoracotomy opening, the temperature became normal, the pleural discharge less, and the empyema cavity smaller. It was thereupon determined to use the dye in our cases; by instillation into the infected pneumothorax cavity as well as by intramuscular injection. The effects that followed were so direct and singular as to prompt this report.

Case 1. Female, aged 36 years. History: pulmonary tuberculosis of three years' duration. The radiograph showed unilateral involvement; the upper-third of the right lung appearing consolidated, and exhibiting numerous small, honeycomb cavities. Tubercle bacilli were present in the sputum. Physical examination was otherwise negative. Pneumothorax was induced, with an obtainable collapse of 80%; a cord-like adhesion being present at the level of the second rib. There followed entire disappearance of temperature, cough and expectoration. Three months after the institution of pneumothorax a temperature of 100 was noted, and fluoroscopic examination showed the presence of a few ounces of fluid in the pneumothorax cavity. Three days later a chill occurred, accompanied by a temperature of 104, severe pain in the collapsed side, dyspnea and vomiting. The fluid had now increased in volume, and aspiration produced a clear, thin, yellowish liquid which a few days later was changed to a thick, odorless pus. This fluid on direct smear showed many pus cells, but no tubercle bacilli or other bacteria, and culture showed no growth on blood agar after 48 hours incubation. Simple drawing out of the fluid giving no material relief, dettol was instilled into the pleural cavity after the succeeding aspirations, but at the end of seven such procedures was abandoned because the fluid was becoming too gelatinous to withdraw, and the condition of the patient had not substantially improved. Prontosil was now employed in the effort to sterilize the pleural cavity; by instillation, after as much of the fluid as could be was withdrawn. It was also given intramuscularly. Improvement was obvious from the first instillation and was consistently maintained as the treatment was continued. The temperature dropped decisively, the fluid became thinner and slower in reforming, and the general condition of the patient was noticeably better. After six instillations all fluid had disappeared from the pleural cavity so the use of the dye was discontinued. Complete absence of fluid was first noted, by fluoroscope, 86 days after its onset, or 50 days after beginning the use of prontosil. The total temperature duration was 58 days, 22 of which were during the administration of prontosil. The entire amount of fluid aspirated was 126 ounces (3725 cc.), in twelve operations, during a period of 48 days. Present status of patient, four months after disappearance of the pleural fluid: Radiographic examination demonstrates an entire absence of fluid in the pleural cavity, but shows adhesion of lung, at its base, to the chest wall; reducing the pneumothorax to approximately 25% of complete. The diseased portion of the lung is fairly well compressed and the contralateral lung shows no change. There is a complete

absence of temperature, cough and expectoration. Weight and strength are restored in their former state, enabling the patient to perform her housework as was formerly done. The pneumothroax is being continued.

Case 2. Female, age 26 years. History: pulmonary tuberculosis of five years' duration. Radiographic examination showed unilateral involvement; heavy infiltration and consolidation throughout the upper-quarter of the left lung. Tubercle bacilli were present in the sputum. Physical examination was otherwise negative. Pneumothorax was induced, obtaining an extreme collapse of 70%; a broad adhesion occupying the apex, and a cord-like adhesion attached to the diaphragm. Temperature, cough and expectoration disappeared entirely. Six months after the institution of pneumothorax, on periodical fluoroscopic examination, a small amount of fluid was seen in the pleural cavity. Next day there developed a temperature of 100.8, severe pain in the collapsed side, dyspnea and vomiting; followed three days later by elevation of the temperature to 102.4, and an increase in volume of the fluid. Aspiration produced a clear, fairly-thin, brownish fluid, which a few days later had changed to a thick, odorless pus. On direct smear this fluid showed no tubercle bacilli or other bacteria, and no growth on blood agar. The experience in this patient with aspiration and with dettol was practically the same as in Case 1, so prontosil was employed in a like manner. The improvement that followed was similar; a prompt response to the dye, with permanent disappearance of the fluid after the sixth instillation. Complete absence of fluid was first noted 98 days after its appearance, or 57 days after the first prontosil instillation. The total amount of fluid aspirated was 185 ounces (5469 cc.), in 17 operations, over a period of 48 days. The total duration of temperature was 74 days, of which 35 were present during the course of prontosil treatment. Present status of patient, three months after disappearance of the pleural fluid: On radiographic examination no fluid is seen in the pneumothorax cavity, the apical adhesion appears the same, but there is now extensive adhesion of the lung at its base, reducing the pneumothorax to approximately 30% complete. The upper-third of the lung is partially compressed, and the contralateral lung remains negative. Cough and expectoration are absent, and the temperature is normal except for a few days preceding menstruation. Strength and weight are restored and the patient is up and about, taking only the two-hour, mid-day rest. The pneumothorax is being continued.

SUMMARY

The prontosil was employed by instillation into the pleural cavity, in 5 to 10 cc. quantities, following aspiration; the latter being performed as called for by reaccumulation of the fluid, at intervals of three to seven days. In addition the drug was injected intramuscularly, 5 cc. every one to three days. When neoprontosil was used, one-half of these quantities were given. Sulphanilamide, used orally for a short time, was without obvious effect. Irrigation of the pleural cavity was neither desired nor attempted. Instillations were kept up throughout the period of the presence of fluid; the intramuscular injections for some days after. Of the two routes the intrapleural appeared the more effective. Close following the first instillations of prontosil a comparatively prolonged reduction in temperature was noted, which with repeated aspiration and instillation resulted gradually in a return to the normal; general improvement invariably accompanied that of temperature. The fluid upon the addition of prontosil, became thinner, less purulent in character, and slower in reaccumulation, to its final disappearance. At no time was there any sign of irritation or infection of the needle-track in the chest wall; nor was there evidence of a bronchopleural fistula. Reactions: The urine changed in color to a pronounced red after administration of the dye by either route, but there was no evidence of kidney damage. Toxic reactions in the blood, skin or gastrointestinal tract were not seen. Adhesions: Adhesion of the pleural layers, with its proportionate loss of the pneumothorax, was not prevented, but it seemed not so widespread as had been heretofore witnessed following fluids of this type. Those that did occur may have been furthered by the dettol, through its gelatinizing effect upon the fluid; an effect also produced in vitro. In the attempt to prevent such adhesion, as high an intrapleural pressure was maintained throughout as was comfortable to the patient.

CONCLUSIONS

In the realization of the seriousness of a pyopneumothorax from this type of infection, with its violent onset and prolonged toxemia, the complications that ensue, and the commonly fatal ending; and in the knowledge of the discouraging results that have followed conservative treatment heretofore, a drug which will bring about the change prontosil did in these respective patients is admittedly worthy of attention. True, there were but two cases, in both, however the dye cleared the toxemia and stopped the reforming of the fluid, thereby preventing complications, avoiding open drainage of the pleural cavity, and, for the present at least,

obviating the necessity of thoracoplasty. It may be certain that the dye will not do the same in every case of pleural infection. Individuals and infections vary greatly, and complicating diseases, known and unknown, may be present, however, prontosil does put into the hand a valuable addition to our weapons against infection. From the standpoint of the patients, both are apparently in as good a condition as they were before the pleural infection occurred, with the exception of a considerable reduction in the volume of their pneumothorax. Perhaps with earlier use of the dye, and more assiduous attention, pleural adhesion with its proportionate loss of the pneumothorax may be better avoided.

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ACUTE INTESTINAL OBSTRUCTION FROM BILIARY CALCULI

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A male, 65 years of age, entered St. Luke's Hospital, Sept. 15, 1930, complaining of cramp-like pain in the abdomen of 60 hours' duration. The pain had begun suddenly in the right lower quadrant with an urge to go to stool. The bowels moved normally two hours later, with some relief of the distress. The pain came in paroxysms and lasted several minutes. After eight hours, he began vomiting at frequent intervals of two hours. The vomitus, early, was stomach contents; later, it was fecal in character. The bowels moved but once, at the outset of the attack.

The past history revealed an attack four months previously of painless jaundice. The patient continued his duties as a streetcar motorman without interruption. The jaundice was low grade in character, afebrile, and disappeared in eight or nine days. His physician had diagnosed a catarrhal jaundice.

Physical examination revealed a well-developed, obese elderly male, markedly dehydrated, and quite ill. The temperature was 101.8° F., rectally; pulse 118; respirations 22. The erythrocytes numbered 4,910,000 per cu. mm. of blood; the leucocytes numbered 15,800 per cu. mm. of blood. The hemoblogin determination revealed 15.3 grams. per 100 cc. of blood. The differential blood count was normal. The blood pressure was 158 mm. of mercury systolic and 80 mm. of mercury diastolic. The urine contained less than 5 mgm. of albumen per 100 cc. The microscopic examination of the urine was negative. The chemical constituents of the blood were: urea 18 mgm. per 100 cc.; chlorides 612 mgm. per 100 cc.; and alkali reserve 58 volumes per 100 cc. of blood. The abdomen was distended moderately with a tympanitic note to percussion. There were no areas of maximal tenderness and no masses could be palpated. Rectal examination was negative and no stool was present on the examining finger.

Under ethylene anesthesia a right paramedian incision was made. Presenting in the wound were dilated loops of ileum. The bowel was examined between the fingers. On approaching the iliocecal junction a firm mass was encountered. It could be moved about within the lumen and did not appear fixed at any point. Distal to it the bowel was collapsed. Although the blood supply to the bowel was obstructed partially, the color was deep maroon. On examination of the bowel below this mass, a second one was found about six inches below the first and only three or four inches proximal to the ileocecal valve. The lower mass, likewise, was moved easily within the lumen. The bowel between the two growths seemed grossly normal. At a point midway within the bowel a transverse incision was made. By gentle manipulation each mass was easily delivered. The bowel then was closed with two layers of black silk. The postoperative course was smooth and the patient was discharged 14 days after the operation.

Chemical analysis revealed the masses to be cholesterol stones. These proximal stones measured 3 cm. in length and 3cm. by 3 in diameter. The distal stone measured 2.2 cm. in length and 3.5 cm. by 2.8 in diameter.

Cholecystographic studies three weeks postoperatively revealed a non-functioning gall-bladder. Roentgenologic examination of the stomach and duodenum was negative.

DISCUSSION

A ruptured gall-bladder is thought of usually as presenting a rather stormy picture. Yet a slow perforation and resultant spontaneous anastomosis with some part of the gastrointestinal tract apparently can occur unobtrusively. This case exemplifies this thesis. The only episode relevant to his condition prior to the bowel obstruction occurred about six months earlier when the writer examined him. He was slightly jaundiced, had slight fever, and remained in bed three or four days. No tenderness could be elicited in the region of his gall-bladder. His convalescence, particularly his gain in strength, had been somewhat slow, in his opinion. At no time did he complain of distress in the abdomen or of dyspepsia until the onset of his bowel obstruction six months later.

Spontaneous cholecystduodenostomy, cholecystgastrostomy, and cholcystcolostomy occur not infrequently and in about the order mentioned. This was probably a cholecystduodenostomy or jejunostomy. The most frequent cause of bowel obstructions probably is adhesions resulting from the inflammatory process. The upper part of the bowel tract, therefore, is usually involved.

The ordinary gallstone is small enough to pass through the digestive tract without notice. If it is large, the most common site of lodgment is at the ligament of Treitz. After passing this point, the next point of obstruction is apt to be the iliocecal valve, which was the site in this patient, where it apparently acted somewhat as a ball valve mechanism for 24 hours, and then became complete.

The procedure of removal of foreign bodies producing bowel obstruction is worthy of comment. It is much better to push the bodies upward and to open the bowel well above the point of obstruction. Closure is easier and the lymphatics of the bowel wall are not so highly impregnated with bacteria as at the point of obstruction.

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CHRONIC ULCERATIVE COLITIS

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HISTORICAL CONSIDERATIONS

This disease has become well known only during the present generation. It was mentioned by Wilks and Moxon in 1875. Hawkins stated that he felt that the "pedigree of the disease can be traced to the bloody flux of Sydenham in 1669." In England bacillary dysentery has been endemic since the 14th century. Eyre (1904) was the first to prove that asylum epidemics were caused by dysentery bacilli. In 1912 Nabarro found that the summer diarrheas in children were in many cases caused by the same germ.

ETIOLOGY

The disease is essentially one of early adult life, the majority of cases occurring between 20 and 40. A few years ago Helmholz reported five cases in children and stated that he was unable to find in the literature "a single article dealing with chronic ulcerative colitis." The sexes are equally involved. Bacteriologically the last word is not yet spoken. In 1924 Bargen described his diplo-streptococcus. According to the rules of Koch he was able to prove the specificity of this germ. However, doubts have been expressed by a number of observers. In particular, A. F. Hurst is definite in his assertion that this is not the cause of the disease. From 14 cases of ulcerative colitis, Paulson isolated ten types of streptococci, but only two were of the Bargen variety. Seven of the ten (including Bargen) were injected intravenously into rabbits. Five (including Bargen) produced lesions in the colon. Three of the strains caused ulcers in 45 per cent. of the experiments, whereas the Bargen type gave results in only 16 per cent.

Since streptococci thrive in mucus, blood and pus the question has been raised as to whether they may be growing accidentally and not etiologicaly. F. Gallart Mones and Sanjuan P. Domingo isolated the Bargen organism in 30 per cent. of the cases of ulcerative colitis studied and in 25 per cent. of normal controls. In rabbits

these observers did not find any more intestinal lesions with the Bargen type than with any of the five other strains, nor did they find the filtrates of the Bargen variety any more toxic. As early as 1906 (Saundby) and 1907 (Hawkins) the belief was expressed that this disease is a form of or a sequel to, bacillary dysentery. In a personal communication shortly before his death, R. H. Jaffe made the same statement. Another well-known pathologist feels that the bowel condition is not primarly of bacterial origin, but that the process is due to some toxemia and he likens it to changes in the intestine incidental to mercurial poisoning. Not infrequently one finds marked depletion of the body as evidenced by the chemical blood studies, showing very low figures for calcium, phosphorus and cevitamic acid. Obviously it is not possible to determine whether this is cause or effect. W. Z. Fradkin believes that in ulcerative colitis, it should be considered to be either amebic or bacillary until proved otherwise. According to this observer in the Sonne strain 1:40 should be considered diagnostic. In the His, Flexner and Mt. Desert strain the titer should be 1:160. G. M. Dack, L. R. Dragstedt and T. E. Heinz have isolated the Bact. necrophorum.

CLINICAL PICTURE

The onset is often acute with severe diarrhea and fever, which is sometimes followed by a quiescent period. At times the beginning is subacute and insidious, the first symptom being the passage of blood and mucus with or without diarrhea. It is not uncommon for a patient to undergo an unnecessary operation for hemorrhoids. The proctoscope should eliminate this error. Diarrhea is almost always a prominent feature. However, the writer has seen at least one patient, who, in spite of marked ulceration, was constipated and was compelled to resort to lubrication with mineral oil. The number of evacuations varies greatly. There may be only two or three, or more than twenty in 24 hours. The stools are not tarry as the condition is confined to the colon. Fresh blood, mucus and pus are in evidence. Actual pain is rare except perhaps at times immediately after a bowel movement, and tenesmus does not occur unless there is involvement of the anal canal, or in cases in which ischiorectal abscess occurs as a complication. In the uncomplicated case the abdomen is not distended. Tenderness is not a part of the picture, and when it does present itself along with distention, it allows the conclusion that the process has extended to the peritoneum. Emaciation may be extreme and half of the body weight, or more, may be lost. Fever is a variable finding. It may be negligible or may run as high as 102 or 103.

COMPLICATIONS

The literature gives the impression that complications are very common.

	1500 cases Mayo Clinic		40 cases New Lodge Clinic	
	No.	Pct.	No.	Pct.
Polyposis	130	8.7	5	12.5
Stricture	110	7.3	5	12.5
Arthritis	60	4.0	1	2.5
Perirectal abscess	50	3.3	5	12.5
Skin lesions	42	2.8	1	2.5
Malignant disease	31	2.1	0	0.0
Perforation of bowel	30	2.0	0	0.0
Renal insufficiency	15	1.0	1	2.5
Endocarditis	15	1.0	0	0.0
Massive rectal hemorrhage (exsanguinating)	15	1.0		
Phlebitis	15	1.0	1	2.5
Splenomegaly	14	0.9	0	0.0
Ocular disease	10	0.7	1	2.5
Nutritional edema	10	0.7	0	0.0
Peripheral neuritis	5	0.3	0	0.0
Progressive arterial occlusion	3	0.2	0	0.0
Multiple liver abscess	2	0.4	0	0.0
Tetany	1	0.07	0	0.0

DIAGNOSIS

Endoscopy usually gives positive evidence of ulceration. However, at times the denuded areas may not be low enough to be within range of the sigmoidoscope. When ulcers are present the experienced proctologist is usually able to recognize the type. Amebic ulcers present raised margins, etc. One of less experience will meet some difficulty in attempting to differentiate. This, however, is not of great importance as the laboratory is the court of last resort. Without regard to ocular or laboratory evidence, amebiasis, because of its curability, should always be considered as a possibility. X-ray films are quite characteristic as there is an absence of haustration and the organ appears as a pipe. Carcinoma is always to be considered, although the age incidence is higher than in colitis. This disease can usually be determined by endoscopy, x-ray or more simply by palpation. Hemorrhagic proctitis is mentioned as a confusing factor, but unless there is some known trauma to cause the local inflammation, it must be very difficult to assert that there is not an ulcerative lesion.

TREATMENT

Rest in bed is one of the most important elements in the cure. The patient should remain there as long as there is fever or until the evacuations drop to two or three in 24 hours. Obviously the diet is of some importance but it seems that the textbooks have advocated too strongly marked restrictions in the intake. As in any other condition accompanied by an irritable bowel there should be no actually cold foods, unless they are taken slowly so as to be warmed in the mouth. For a number of years the writer has felt that the diet should be fairly liberal, omitting only such items as have seeds or skins or a large amount of cellulose. Probably at this time a liberal diet is not so important as it was before the days of mineral tablets and concentrated vitamins. As far as possible the diet should be adjusted to the likes and dislikes of an individual whose appetite is already greatly impaired. It has been gratifying to learn that A. F. Hurst holds the same view regarding the advisability of more liberal diets. Some years ago a patient was seen with a physician, who was insisting on extreme restrictions in the solid and fluid intake in a young man who was having more than 20 copious evacuations daily. Bed rest may be called a passive form of treatment and is of great value. The writer has never been convinced that any one of the active forms of therapy has been proved to be of real worth. In spite of this practically all the methods advocated in the literature have been used, care having been exercised, however, to do nothing that might harm an individual already greatly depleted.

Spontaneous cures may occur and nothing should be done to interfere with the greatest of all physicians—nature.

LOCAL MEASURES

There is a good reason to doubt that these measures have real value. However, when the patient is not doing well on merely passive treatment it seems justifiable to try various forms of therapy including local. Some years ago Crohn and Rosenberg reported a series of cases all of which made excellent recoveries while instillations of neutral acriflavan were employed. A start was made with solutions of 1-4000 and the strength gradually increased up to 1-2000 or more. Hurst advises a solution of tannic acid starting with ½ grain per ounce, the amount of the injection being not greater in volume than can be retained for at least one-half hour. He also suggests, when the process is confined largely to the distal colon, one or two grains of bismuth subgallate to the ounce of a vehicle made by dissolving one dram of coriene in four ounces of water. Of this six or eight ounces are instilled. If difficulty is encountered in having this retained tr. opium, minims 5 to 15 may be added. Hurst also advocates the use of charcoal, a tablespoonful two or three times a day. The writer has had no experience with this. In order to combat the anemia, some form of iron is usually advisable; also calcium, phosphorus and the various vitamins. Frequently transfusion is of great help or even imperative. Codein or opium may be given to check the number of evacuations or to ease the pain which occurs in a moderate number of cases.

In recent years various combinations of kaolin and aluminum hydrate have been used per rectum. J. B. Eyerly and H. C. Breuhaus, after a cleansing enema of one pint of warm water, give a retention enema of three to five ounces of a mixture of kaolin and aluminum hydrate in the same amount of water. W. Z. Fradkin found good results in convalescent patients who persist in showing blood. His mixture is made up of two parts of kaolin, one part of mineral oil and seven parts of a gel of 2½ per cent. aluminum hydrate. In case the diarrhea is marked he gives a preliminary enema; otherwise a small saline enema two hours before the instillation, which consists of six ounces of the mixture with four ounces of water, at first three times a week and gradually reducing the frequency to one a week. Because of the beneficial effects of cod liver oil applied to infected wounds, the same treatment has been carried over to the bowel. R. Spiegel advocates a 40 per cent. emulsion in acacia and water. Also he has used a large suppository containing 68 per cent. of this oil. Manville makes use of a spray gun through the sigmoidoscope, using plain cod liver oil.

Some years ago John A. Logan reported three cures on ten minims of Lugol's solution three times a day. The writer has had no results from this treatment, nor has he seen reports of cures from other sources. For some years kaolin has been used in doses of a tablespoon or more three

or four times a day. In only one case did this drug seem effective and its use was discontinued largely because of its tendency to cake in the rectum. It is possible that in the newer method of administration (kaolin in emulsion with aluminum hydrate) better results will be achieved.

SPECIFIC TREATMENT

Even though amebae are not found it is a good plan to start every treatment with preliminary amebicidal therapy. This is especially true in children, in whom chronic ulcerative colitis is very uncommon. Furthermore, it must be remembered that with the proctoscope it is difficult to determine the type of ulceration with a high degree of certainty. However, when amebiasis is not proved one should certainly choose a harmless drug—not an arsenical and probably not emetin, except in small dosage and then followed by a less toxic drug.

In bacillary dysentery Hurst administers multivalent serum. After preliminary desentization, he gives 20, 40, 60, 80 and 100 cc on successive days. In case the patient is being cared for at home he gives intramuscularly 10 cc daily for ten days. In regard to vaccines for the non-bacillary type he believes that they have no value and that even harm may accrue. As opposed to this we have the views of Bargen. Ever since this worker published his investigations the writer has been using vaccines but always without strong convictions regarding the efficacy. However, whenever it was possible to obtain from the bowel ulcers, typical cultures of the Bargen diplostreptococcus those patients made more rapid progress while undergoing the vaccine treatment than did those from whom a different strain was recovered. For the present and until some better treatment is discovered it seems justifiable to make use of autogenous vaccines and the writer has seen no harm in so doing.

Recently an attempt is being made to treat colitis by means of fever therapy. It has been thought that in giving vaccines, the reactions accompanied by fever are the important elements of the treatment, rather than specific effect of the material. L. K. Ferguson, F. Fetter and T. G. Schnabel have induced fever but believe that the beneficial effect is due to a systemic action rather than a bactericidal. They use a relatively low temperature and short sessions; 2½ to 3 hours at 104 to 105 (Rectal) three times a week. The number of treatments averages 12.

SURGICAL TREATMENT

Some surgeons believe that this disease is as definitely surgical as appendicitis and are in favor of doing a multiple-stage colectomy as soon as the condition is definitely diagnosed including the ruling out of amebiasis. The mortality entailed by this major operation is probably not appreciably higher than the mortality of a non-surgical regime. However, it is seldom possible to close the preliminary ileostomy and the patient is doomed to go through life with an artificial anus. R. B. Cattell in reviewing the results of surgery at the Lahey Clinic found that in 20 per cent. of the cases some form of operation was deemed necessary. He believes that in only a few patients could relief be obtained by ileostomy or partial colectomy. He also found that seldom would it be possible to anastomose the ileum to the rectal stump, which is practically always diseased. The viewpoint regarding surgery may be modified by the following data on

PROGNOSIS

Hurst believes that the non-surgical mortality is between five and ten %, which corresponds in a general way to the experience of the writer. In his series 77.6% were well and "carrying on" and without relapse, 10.6% were not well but "keeping better and about," 2.4% were definitely ill and 9.4% dead. Other authorities publish much higher mortality figures, Hern (1931) in a summary of 50 cases 1917-26 at Guy's Hospital stated that 28% died in the hospital and an additional 12% died shortly after leaving.

Hardy and Bulmer had 31 deaths in 95 patients.

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INSTITUTIONAL BLOOD BANKS

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Much has been written in recent years about blood banks and their development. Institutions have reported upon the establishment of centers for the collection of blood from expectant moth-

From the Chicago State Hospital, Edward F. Dombrowski, Managing Officer.

ers, willing donors, placentas, cadavers and decompensated and hypertensive patients, (1, 2, 3, 4,) to be used at some later date for transfusion purposes. Little need be said concerning the apparent efficacy of such procedures. Their wide spread usage and acceptance as a desirable and reliable method of making transfusions readily available suggested that some such method might be adopted in large institutions with a static population.

Venesection for the treatment of hypertension has been used as a remedy for many years and its use probably antedates the explanation of its value as a therapeutic agent. Phlebotomy as practiced in the days of its vogue when a full and bounding pulse was considered an indication for bloodletting probably was responsible for improvement in many hypertensive patients. MacKenzie[5] included hypertension especially when associated with right heart congestion as one of the indications for venesection. He writes, "I always bleed at the usual place, at the bend of the elbow, and abstracted from twenty to thirty ounces of blood. The immediate relief given to the patients is often striking." The procedure of bloodletting for hypertensive patients, those with decompensated hearts where right heart failure predominates, and for polycythemia has been continued for many years and is considered an excellent form of treatment.

Several questions as to the advisability of the use of blood from hypertensive patients might be raised but the literature seems to support the contention that such blood can be used safely. Boleslaw Popielski[6] described the use of citrated blood obtained from hypertensive patients for transfusion purposes and stated that the results were satisfactory. Host[3] describes the use of blood from hypertensive subjects to patients with normal blood pressure but without observing any increase in pressure in the recipient. In describing the transfusion of blood from an eclamptic patient without producing any change in the blood pressure of the recipient, he shows that the pressor substances associated with such toxemias apparently do not exert an influence on recipients. G. W. Pickering[7] states that the blood of patients suffering from essential hypertension is similar to normal blood in its content of pressor and depressor substances. He further writes, "Therapeutic results of using hypertensive donors is quite satisfactory and the procedure is one that may be commended as likely to benefit both donor and recipient." In view of such opinion, concerning relief by venesection in cases of hypertension it was felt that a group of patients might readily be selected from among the hypertensive individuals in an institution, who might benefit by removal of 100 to 400 cc of blood.

State institutions for the mentally ill have a fair percentage of hypertensive patients, many of whom form a part of the static population. It was felt that by carefully selecting a group of plethoric individuals with a blood pressure elevation that an efficient blood bank could be established in which hypertensive patients would be given a venesection when a blood transfusion was needed as an emergency procedure.

Blood banks have been formed usually through having blood removed from available sources and stored until such eventualities as required their use arose. The use of a living blood bank is uniquely possible in institutions for mental patients with resulting benefit to donor and recipient.

Because of the difficulty encountered in the obtaining of blood for transfusion purposes at the Chicago State Hospital for patients, many of whom have no relatives, it was felt that a blood bank would be of real value. A group of hypertensive patients were selected whose physical condition was such that there would be no likelihood of danger to the patient in having several hundred cc of blood removed. Complete blood counts and differentials, blood chemistry determinations for urea, nitrogen, createnine and sugar were made on all patients. A urinalysis and any other such work-up as deemed advisable were undertaken. The blood serology was checked on all patients as indicated by the report on the admission record and rechecked by another serologic examination of the blood. Finally, all the patients were typed; the typing being recorded in the International and Moss Classifications.

The blood bank is now in operation. Twelve transfusions have been successfully performed during the last several months. This is especially significant when compared with the failure to give any transfusion during the previous five years, from 1931 to 1938. The citrate method

of transfusion has been used to date and will probably be used exclusively because of the unique circumstances of our blood bank.

The authors wish to point out the possibility of development of a living blood bank in institutions, especially institutions for mental patients. Such a blood bank can be of mutual benefit to the hypertensive patient as well as the recipient.

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THE PITTSBURGH CHAMBER OF COMMERCE OPPOSES GOVERNMENT MEDICINE

The following resolution was adopted by the Chamber of Commerce and forwarded to the President of the United States and all members of Congress from Pennsylvania.

"The Pittsburgh Chamber of Commerce, whose civic program on public health work has brought it into frequent contact with the medical profession and its various associations, wishes to publicly express its confidence in the principles and the purposes of the American Medical Association and the various affiliated medical groups that have been charged with violation of the Federal Anti-Trust Laws.

"The Chamber of Commerce feels that organized medicine is not hostile to, or active against, any adequate plan for bringing medical and hospital service to the public at reasonable cost. We cite in support of this stand the current cooperation of the Allegheny County Medical Society with Pennsylvania's Public Assistance Plan for Care of the Indigent Sick; its acceptance of group hospitalization insurance and its proposal to consider insured medical service for certain low income groups.

"This Chamber, however, stands with the Allegheny County Medical Society and other medical associations in opposing centralized government control through socialistic measures. We believe that such direction and control will prove extravagant and wasteful and is opposed to efficient service. It also tends to compete with current forms of medical practice and hospital service which are now under local and state sponsorship and is but another step toward un-American socialization of our accepted form of Government."

THE PHYSICIAN'S WIFE

"Many a flower is born to blush unseen" might apply to a physician's wife. Much has been said about the physician being this and the physician being that but nary a word about the physician's wife, which only goes to show that there are still acres of diamonds that poets might eulogize in meter and rhyme, or that painters might use as a type of grace and charm, or musicians eulogize in some sweet symphony.

It is interesting to study physicians' wives. The blushing bride comes first and she is a blushing bride —and why not—she is the wife of a physician and proud of it. Strange as it may seem, there is still left in the world a faint halo about a physician, a lawyer, and a preacher—the professional man is still regarded as a good catch. But the honeymoon fades for physicians' wives the same as for other wives. Life quickly becomes real.

In motherhood she portrays her beauty, courage and strength. The physician is usually poor; finances run low; babies come; there is housework to do; the children's school days arrive; telephone calls must be answered and calls listed; the children's cuts, bruises and "tummy-aches" must be attended to and usually by the physician's wife. Neighbors must be satisfied; sewing circles, bridge luncheons, and church affairs demand her attention. Then too, her great problem is the physician himself. She is always solicitous of his rest, his food, his clothing, his hair cuts, his general appearance, his comfortable chair, and his reading material. She brings him the kind of innocent gossip he likes, is the inspiration when things are on the downgrade, suggests a change of pasture for him from the daily grind, lends that professional aid that at times is needed in the office, and last, but not least, is to be commended for living with him when through fatigue he becomes cross and irritable. It is also interesting to observe the defense mechanism which she uses to protect his follies and shortcomings.

Socially and culturally the physician's wife represents a cross section of society. She may find time for art, literature, or music. She may go in for swimming, dancing, tennis, golf, or horseback riding. She may have her flower gardens, special arts and crafts, needlework and embroidery, reading or writing. She may hold strong religious tenets and find outlet in community activities. She is faithful to her auxiliary, is a good mixer, and she may be politically inclined. Generally, she is a pal for her husband in the serious as well as the lighter things of life. Like a good dancer she adapts herself to the leader, his moods, his temperament, his likes, and dislikes. Yet beneath all of these she retains her ego, pride and dynamic personality.

Then, as the years go by, there is the dear, sweet person that nature has provided with the "foundations and settings" to begin the life of an elderly person, that type of person whose eyes are so understanding, whose voice is kind and gentle, whose smile breaks the wrinkles of her cares and worries of yesterday—the

woman whose life has been one of courage, fidelity, steadfastness, and loyalty to the old gentleman over there whose eyes are still keen but whose steps falter and whose hands shake. Yes, she is the physician's wife.—*Penn. Medical Journal.*

REFRIGERATE CANCER IN NEW TREATMENT

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RICHMOND.—Refrigeration, involving "artificial hibernation" is a helpful aid in the treatment of human cancer, Dr. Lawrence W. Smith, of Temple University School of Medicine, Philadelphia, told the American Association for Cancer Research. But it is by no means a cure.

This low temperature "cold" treatment tried on more than 30 cases of inoperable cancer, Dr. Smith reported, gave these results:

Prompt reduction in pain; reduction in size of the local lesion; general improvement in the patient's condition; tendency toward healing of ulcerative and fistulous lesions; and a retardation in recurrences and in the rate of growth of such recurrent lesions.

The refrigeration treatment is applied locally directly to the cancer, or the temperature throughout the body generally is reduced by "artificial hibernation." The treatment is based on evidence that temperature is an important factor in the activation of embryonic cell growth and that there are very definitely "critical" levels of temperature which have a much narrower range for young cells like cancer cells than for adult differential cells.

Dr. Smith suggests that refrigeration treatment should be made a definite part of cancer treatment, not as a cure in itself but as an adjunct to x-ray treatment and surgery.

Marriages

FREDERICK CHRISTOPHER to Miss Dorothy Watt, both of Evanston, Ill., May 19.

SILVIO ERRICO to Miss Marguerite E. De Greve, both of Moline, Ill., May 4.

JACOB SALVATORE DIGATE to Miss Edith Alberts, both of Chicago, March 18.

FREDERICK RUSSELL HASELTON, Lieutenant Commander, U. S. Navy, to Mrs. Ebba Hovey Hall at Great Lakes, Ill., April 14.

CLEMENT P. O'NEILL, Rock Island, Ill., to Miss Baptista Hummer of Davenport, Iowa, April 10.

JAMES B. WALLER, Decatur, Ill., to Miss Esther Behnke of Whittemore, Iowa, in April.

Personals

Dr. Gustavus M. Blech has been awarded by the city of Langres, France, famous as the birthplace of the philosopher Diderot, the distinction of Honorary Citizen of that city by decree of April 11, 1939.

Dr. Max Thorek has been made Corresponding Academician of the National Academy of Sciences of Mexico.

Dr. Doris Hopkins and Dr. Leon Unger delivered a paper "Is Asthma an Indication for Abortion" before the Chicago Society of Allergy on Monday, April 24, 1939.

Dr. James H. Hutton has been invited to meet with the Stephenson County Medical Society at Freeport on May 25 and discuss "What the State and the A. M. A. are Doing About the Socialization of Medicine."

Dr. Don C. Sutton addressed the South Dakota State Medical Association Aberdeen, South Dakota, April 25, subject: Arteriosclerosis, Etiology Symptoms and Treatment; and discussed Continued Fever.

Dr. Leon Unger has been invited to address the Hancock County Medical Society on May 8, subject, "Allergy."

Dr. James Herbert Mitchell will be the guest of honor and speaker at the Bureau County Medical Society on May 9; he will talk on "Diagnosis and Treatment of Common Dermatosis."

Dr. I. Michael Levin will address the Union County Medical Society on May 11, subject, "Heart Disease in Childhood."

Dr. Lee C. Gatewood has been invited to address the Kankakee County Medical Society on May 11, subject, "Jaundice, Its Causation and Clinical Study."

Dr. J. D. Kirshbaum gave a paper on Toxic Hepatitis May 9 before the McLean County Medical Society at Bloomington, Illinois.

Dr. M. A. Perlstein has been invited to talk before the Coles-Cumberland County Medical Society on May 24. He will talk on "Sulfapyridine with Special Reference to its use in Pneumonia."

Dr. Oscar B. Nugent addressed the New Mexico State Medical Society, Gallup, New Mexico,

on May 11, on the subject of "Eye Conditions of Interest to the General Physician."

Dr. Henry Schmitz spoke before the Madison County Medical Society, Anderson, Indiana, May 22. The title of his address was "The Use of X-ray Therapy in the Treatment of Pelvic Diseases."

Drs. Emil Hauser and Walter Fischer will share in a symposium on orthopredics to be given before the Madison County Medical Society on June 2. Dr. Hauser will talk on "Derangements of the Knee Joints" and Dr. Fischer on Common Disorders of the Feet."

Drs. M. H. Streicher will address the St. Clair County Medical Society, June 1, "Diseases of the Colon and Rectum and Proctoscopic Examinations."

Dr. Tell Nelson is scheduled to address the Fulton County Medical Society at Canton, June 2, subject "Allergy in General Practice."

Dr. Clayton J. Lundy spoke before the Toledo Academy of Medicine, May 12. The subject was rheumatic heart disease and included his new movie reel on the "Electrocardiographic Diagnosis of Rheumatic Heart Disease."

Dr. Willard VanHazel is scheduled to talk on "Surgical Treatment of Pulmonary Tuberculosis" before the Marion County Medical Society on May 25.

Drs. H. E. Davis and John A. Wolfer will present a cancer program before the doctors of the Henry County Medical Society at Kewanee on May 25.

Dr. Walter C. Earl, Cuernavaca, Morelos, Mexico, has been appointed director of the Champaign-Urbana health district it was recently reported.

Dr. Julius B. Stokes has resigned as superintendent of the Livingston County Sanatorium, Pontiac, effective April 1.

Drs. Howard A. Rusk and Harold G. Newman, St. Louis, addressed the Marion County Medical Society, Centralia, April 20, on "Diagnosis and Treatment of Undulant Fever."

Dr. Albert C. Baxter, acting director of the Illinois State Department of Health since the resignation of Dr. Frank Jirka in 1937, has been appointed head of the department, newspapers reported May 4.

Dr. Charles E. Galloway, Evanston, Ill., discussed "Pathology of the Cervix" before the Sangamon County Medical Society, Springfield, April 6.

The Chicago Pathological Society was addressed at its annual meeting May 8, among others, by Drs. Edwin F. Hirsch and Russell H. Morgan on "The Causal Significance to Traumatic Ossification of the Fibrocartilage in Tendon Insertions."

Dr. Albert Graeme Mitchell, Cincinnati, will speak on "What I Don't Know About Endocrines" before the Chicago Pediatric Society May 23.

At a meeting of the Chicago Ophthalmological Society May 8, the speakers were Drs. Harry S. Gradle and Daniel Snydacker on "Report of Three Cases of Retinal Detachment Occurring in Glaucoma;" Arthur Weil and Leo L. Mayer, "Attempts to Produce Experimental Tumors of the Eyeball," and Stephan van Wien, "The Leland Refractor; A Method for Refraction Under Binocular Conditions."

Dr. Roland M. Klemme, St. Louis, discussed "Neuralgias of the Head and Face; Differential Diagnosis and Treatment" before the Adams County Medical Society, Quincy, April 10. Dr. Franklin E. Walton, St. Louis, discussed "The Surgeon's Approach to Diseases of the Gallbladder" before the society recently.

The Peoria City Medical Society was addressed March 21 by Dr. James H. Hutton, Chicago, on "Diagnosis and Treatment of Neglected Endocrinopathies;" March 7 by Dr. Raymond M. Rice, Indianapolis, "Clinical Use of Female Sex Mormones," and February 21 by Dr. August A. Werner, St. Louis, "Influence of the Endocrines on Growth and Development."

Mrs. Della Gahagan, 5550 Kenmore avenue, widow of Dr. Henry J. Gahagan, psychiatrist, was notified recently that special recognition of carrier May 13 and it turned out to be positive. There was nothing to identify the source of the specimen. The postmark was not legible and the physician who sent the specimen failed to give his own name or that of the patient.

Dr. Max Cutler, director of the Chicago Tu-

mor Institute, recently returned from a cruise around South America in which he gave nine addresses before medical associations and universities. The Chicago Tumor Institute has granted one fellowship to each of the South American countries for graduate instruction in the field of cancer. The fellows will be selected by the deans of the medical schools and the ministers of health.

Dr. William F. Scott, Maywood, for many years chief of staff of the Oak Park Hospital, her husband's long services to the state has been paid in the Illinois exhibits at the New York and San Francisco fairs.

The identical exhibits are pictorial representations of what the Illinois welfare department is doing to aid the state's afflicted persons. Included is a large color photograph of a cottage at the Elgin state hospital, which was erected as a memorial to Dr. Gahagan.

Dr. Gahagan, who formerly headed the Elgin hospital staff, was killed by an automobile Nov. 9, 1936.

News Notes

Dr. Albert Szent-Gyorgyi, professor of medical chemistry, Royal Hungarian Franz Josef University, Szeged, Hungary, will lecture in the Palmer House May 26 under the auspices of the Institute of Medicine of Chicago, on "The Mechanism of Biological Oxidation."

Dr. John Alexander, professor of surgery, University of Michigan School of Medicine, Ann Arbor, will deliver the annual Hedblom lecture sponsored by the Phi Beta Pi Fraternity of the University of Illinois College of Medicine May 17. His subject will be "The Management of Bronchiectasis and Abscess of the Lung."

The state department of public health is trying to find an unidentified typhoid carrier somewhere in Illinois and thereby avert a possible outbreak of the disease. The state diagnostic laboratory received a specimen for examination for a typhoid was guest of honor at a dinner April 26 given by the Sisters of Misericorde in honor of his many years of service as chief of the staff of the hospital. Members of the staff presented to the hospital an oil portrait of Dr. Scott, which is to be hung in the hospital gallery, and Dr. Scott was presented with a memorial volume containing the signatures of his friends and associates. Dr. Austin A. Hayden, Chicago, was toastmaster.

Dr. James B. Herrick, Chicago, was voted the American Medical Association distinguished service award for outstanding work in the field of medicine.

Dr. Herrick has been an attending physician at Presbyterian Hospital, Chicago, since 1895, and is known for his work in coronary thrombosis—a blood clot in the heart and a frequent cause of death in elderly persons.

Members of the House of Delegates selected Dr. Herrick by 81 votes from among three candidates chosen by the association's board of trustees. The others were Dr. Chevalier Jackson, 74, Philadelphia, who was second in the balloting with 79 votes, and Dr. Edward Jackson, surgeon at the Wills Eye Hospital, Philadelphia, who was eliminated in early voting.

Dr. Herrick was born in Oak Park, Ill., Aug. 11, 1861, was graduated from the University of Michigan and Rush Medical College, and served his interneship in Chicago. He is an honorary member of the New York Academy of Medicine and the author of a handbook on medical diagnosis.

Dr. Chevalier Jackson is known for his work in bronchoscopy, removal of foreign bodies from the lungs by tubes through the mouth. He has the decorations of an officer of the French Legion of Honor and a commander of the Order of the Crown of Italy. Dr. Jackson, author of several books on bronchoscopy, is a graduate of the Temple University School of Medicine.

Formal presentation of the award will be made at the first general session of the association.

WANTED—Back numbers of the JOURNAL. We have several requests from libraries for the March, 1937, issue. We have also many requests on file from universities and libraries for all numbers and volumes of the ILLINOIS MEDICAL JOURNAL issued previous to 1916. Communicate with us at 6221 Kenmore Avenue, Chicago, Illinois.

Deaths

FRANCIS EARLE BRIGGS, Ludlow, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of

the University of Illinois, 1907; member of the Illinois State Medical Society; aged 56; died, February 2, of carcinoma of the stomach.

CHESTER ROY BRIGHAM, Polo, Ill.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1905; member of the Illinois State Medical Society; served during the World War; aged 66; died, February 27, of coronary thrombosis.

JOHN F. COURTNEY, Joliet, Ill.; Chicago Homeopathic Medical College, 1894; member of the Illinois State Medical Society; aged 77; died, Dec. 27, 1938.

NORLE MURRAY EBERHART, Chicago; Bennett Medical College, Chicago, 1894; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois; a Fellow A. M. A.; director of the x-ray laboratory and head of the department of physiological therapeutics, Loyola University School of Medicine, 1911-1913, and professor of electrophysics, Post-Graduate Medical School, 1902-1905; at various times professor and head of the department of electrotherapy, American College of Medicine and Surgery, Medical Department of the Valparaiso University, and Chicago College of Medicine and Surgery, Medical Department of Valparaiso University; president of the North Shore Branch, 1912-1913, and member of the Council, Chicago Medical Society, 1913-1915; author of "Manual of High Frequency Currents," which passed through eight editions; aged 68; died, February 9, of epithelioma of the left hand with metastasis.

VERNON SYLVESTER FILDES, Olney, Ill.; Washington University School of Medicine, St. Louis, 1905; member of the Illinois State Medical Society; aged 57; died, February 4, in the Olney Sanitarium, of bronchopneumonia and cerebral hemorrhage.

JACOB C. FULTS, Waterloo, Ill.; St. Louis Medical College, 1885; aged 77; died, January 30, at Shelbyville, Ind., of a cerebral hemorrhage.

RANDOLPH MOORE GILLIAM, Chicago; University of Virginia Department of Medicine, Charlottesville, 1919; aged 43; died, January 14, in the University Hospital, Charlottesville, Va., of rheumatic heart disease.

ALFRED M. HOUSTON, Joliet, Ill.; Hahnemann Medical College and Hospital, Chicago, 1904; a Fellow A. M. A.; on the staffs of the Silver Cross Hospital and St. Joseph's Hospital; aged 63; died, February 9, of sarcoma of the maxilla.

HENRY EBEN HUNT, Roodhouse, Ill.; Northwestern University Medical School, Chicago, 1896; aged 66; died, February 8, in Our Saviour's Hospital, Jacksonville, of carcinoma of the rectum.

HARRY CULLEN KARIHER, Champaign, Ill.; Rush Medical College, Chicago, 1903; member of the Illinois State Medical Society; past president of the Champaign County Medical Society; served during the World War; aged 59; on the staff of the Burnham City Hospital, where he died, February 5.

GEORGE L. MCLAUGHLIN, Chicago; Rush Medical College, 1900; member of Illinois State Medical Society; aged 63; died, January 18, in Rochester, Minn., of carcinoma of the colon.

ANNIE M. MENNIE, Chicago; Illinois Medical College, Chicago, 1901; aged 72; died, February 11, in the Washington Boulevard Hospital, of carcinomatosis.

WILLIAM EDWARD MORGAN, Chicago; Chicago Medical College, 1882; prosector in anatomy, 1881-1882, demonstrator in anatomy in 1885, demonstrator in operative surgery in 1887, professor of surgical anatomy and operative surgery in 1892, professor of clinical surgery, 1902-1920, and in 1924 was appointed medical counselor at his alma mater; professor of general and clinical surgery, Loyola University School of Medicine, 1920-1929, and since 1929 professor emeritus; past president of the Chicago Surgical Society; formerly on the staffs of the Mercy Hospital, Englewood Hospital, German Deaconess Hospital, Provident Hospital, Washington Park Hospital and the Jackson Park Hospital; aged 80; died, April 25, of chronic myocarditis and arteriosclerosis.

JOHN FORSTER ORR, Chicago; Victoria University Medical Department, Coburg, Ont., Canada, 1886; aged 80; died, January 8 of myocarditis and arteriosclerosis.

DAVID W. REID, Jacksonville, Ill.; Chicago Homeopathic Medical College, 1889; member of the Illinois State Medical Society; on the staff of the Passavant Memorial Hospital; aged 83; died, January 15, of bilateral bronchopneumonia.

DARWIN SCHOTT, Champaign, Ill.; Homeopathic Medical College of Missouri, St. Louis, 1903; served in the World War; aged 58; died, January 30, in Burnham City Hospital of cirrhosis of the liver.

FRANK EDWARD SCHRAM, Chicago; Chicago College of Medicine and Surgery, a Fellow, A. M. A.; 1915; served during the World War; aged 49; died, January 16, in St. Luke's Hospital following an operation for acute appendicitis.

LEO STEINER, Chicago; Jenner Medical College, Chicago, 1906; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; member of the Illinois State Medical Society; instructor in medicine, 1911-1913, instructor in materia medica, 1913-1914, associate professor of materia medica and therapeutics, 1914-1915, and professor of materia medica and therapeutics, 1915-1916, Bennett Medical College; formerly superintendent of the Illinois Eye and Ear Infirmary; aged 55; died, January 7, of carcinoma of the colon with metastases to the liver.

CLARENCE A. WELLS, Quincy, Ill.; Missouri Medical College, St. Louis, 1897; a Fellow, A. M. A.; aged 68; on the staffs of the Blessing Hospital and St. Mary's Hospital, where he died, January 15, of injuries received in a fall.

WILLIAM MANNEN YOUNG, Bloomington, Ill.; Eclectic Medical Institute, Cincinnati, 1897; member of the Illinois State Medical Society; on the staffs of St. Joseph's Hospital and Mennonite Hospital; aged 71; died, January 19, of heart disease.